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The Milroy Lectures
ON
ANKYLOSTOMA INFECTION.

Delivered before the Royal College of Physicians of London on March 2nd, 7th, and 9th, 1911,

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LECTURER ON PATHOLOGY, GUY'S HOSPITAL.

LECTURE III.[1]

Delivered on March 9th.

THE TREATMENT AND PROPHYLAXIS OF ANKYLOSTOMA INFECTION.

MR. PRESIDENT AND GENTLEMEN,—Ankylostoma may be attacked either in the parasitic or the saprophytic phase, and treatment of infection includes the treatment both of persons and of places.

With regard to personal treatment, two different objects may be aimed at, first to make the individual physically well and able to work, and secondly to render him incapable of laying down infection for others. It is important to realise that curing a man of ankylostomiasis is by no means equivalent to curing him of ankylostoma infection: the former is generally easy, the latter may be extraordinarily difficult.

Many cases of ankylostomiasis may be cured by removing them to a place where no further infection is possible. Under these circumstances the worms become less numerous and the poisonous effects of those which remain diminish. Thus in Cornwall a number of men who had given up underground work because of dyspnœa and faintness and had remained on surface had all much improved without any further treatment. This, however, does not always occur. In an exceptional case, undiagnosed and untreated, the patient was still very ill four years after the last exposure to infection and had only 30 per cent. of hæmoglobin. In Porto Rico it had been observed, before the cause of the anæmia there prevalent had been discovered, that anæmic agricultural labourers nearly always improved if they went to live in a town; this was attributed to better food and lodging, but was, of course, due to the avoidance of the constant reinfections associated with country life. Ashford[2] gives the following details regarding 28 inmates of the Girls' Christian Orphanage at Porto Rico who were noted as being anæmic on admission and had been in residence two years or more; 26 were still infected. The average hæmoglobin percentage was 81; only one had under 60 per cent. and six less than 70 per cent.

There do not appear to be any extensive statistics on this point; it would, indeed, be rather scandalous if there were. But some light is thrown on the matter by the following data given by Nicol,[3] showing how infection dies out in Indian coolies working in Natal. The figures are the more remarkable since the conditions prevailing in Natal cannot possibly be taken as excluding the possibility of reinfection.

	Number examined.	Percentage infected.
On arrival	223	81
,,	215	86
On estates	614	61
,,	709	45
After 5 years in Natal	184	53
,, ,, ,,	80	43

But doing nothing is, as has been already pointed out, a fearfully slow way of getting rid of infection; the original worms live on for years. For this purpose definite anthelmintic treatment is required.

DRUG TREATMENT.

Four drugs have found favour with different practitioners—thymol, β-naphthol, eucalyptus oil, and male fern. Many others have, of course, been tried and recommended. In most tropical countries thymol is generally used; in Germany and Belgium eucalyptus and male fern are preferred. The most valuable experience in this respect is that of the Porto Rico Commission. During ten years 300,000 cases have been carefully examined, treated, and the effects ascertained. Moreover, all four drugs have had a good trial. Male fern was found uniformly useless, eucalyptus was so horribly nauseating that its administration became impracticable, while thymol and β-naphthol were about equally efficacious in expelling the worms, one dosing (i.e., two half-drachm doses) of either killing on the average about 75 per cent. Thymol has the disadvantage that it costs about five times as much as β-naphthol, but after a lengthy trial the latter drug was eventually discarded in favour of thymol owing to the discovery that β-naphthol may set up a fatal acute nephritis in persons whose kidneys are already somewhat diseased. Nicol[4] has observed the same thing in Natal. All the drugs in question are, of course, poisonous enough if they are absorbed from the bowel into the economy; permanent blindness has been caused by male fern in a few cases in Westphalia, and both thymol and β-naphthol have been the immediate cause of death in a few persons who were already very ill.[5] But the not uncommon impression that thymol is very dangerous is certainly untrue so long as no active measures such as drinking alcohol are taken to promote its absorption. It is also desirable that it should be clearly recognised that small doses (e.g., 5 grains) are quite useless.[6] Two or three half-drachm doses at hourly or two-hourly intervals are necessary if any considerable proportion of the worms present are to be killed. Taking all the evidence into consideration, one comes to the conclusion that there is no drug better than thymol, and that β-naphthol and male fern should be avoided. It is possible, however, that the most efficacious remedy is not the same for *A. duodenale* as for *A. americanum*, though at present there is no definite evidence to this effect.

It is not usual to find that one dosing is sufficient to expel all the worms. The following figures from Porto Rico show the number of weekly doses which had to be given till no eggs could be found in the fæces:—

Number of doses of thymol.	Number of persons.	Per cent.
1	1518	42
2	1166	32
3	518	14
4	247	6
5	104	3
6	47	1
7	19	} 2
8	6	
9	3	
10	1	
11	1	
Total	3630	100

Of the 184 cases recorded by Sandwith[7] in Egypt only 23 per cent. were cured by one dosage with thymol, and 23 per cent. required more than three dosings; the largest number necessary was eight and the average number two and a half.

Number of doses.	Number of persons.	Per cent.
1	42	23
2	58	31
3	42	23
4	25	14
5	9	5
6	4	} 4
7	2	
8	2	
Total	184	100

The first dose kills about three-quarters of the worms present, the second and succeeding doses smaller and smaller numbers, as shown by the following data obtained by Ashford by careful enumeration of the worms expelled. The figures are

[1] Lectures I. and II. were published in THE LANCET of March 18th (p. 717) and 25th (p. 783) respectively.
[2] Anæmia in Porto Rico, 1904, p. 50.
[3] Transvaal Medical Journal, vol. v., 1910, p. 228.
[4] Loc. cit.
[5] Sandwith: THE LANCET, June 2nd, 1894, p. 1365.
[6] Fearnside (Brit. Med. Jour., vol. ii., 1900, p. 541) records several cases who took 20 or 30 grains thymol for 10 to 30 days, and still had plenty of eggs at the end. Evidently what is wanted is a high concentration of thymol lasting for only a short time, such as is produced by three 30 grain doses at intervals of two hours instead of 24 hours.
[7] THE LANCET, June 2nd, 1894, p. 1365.

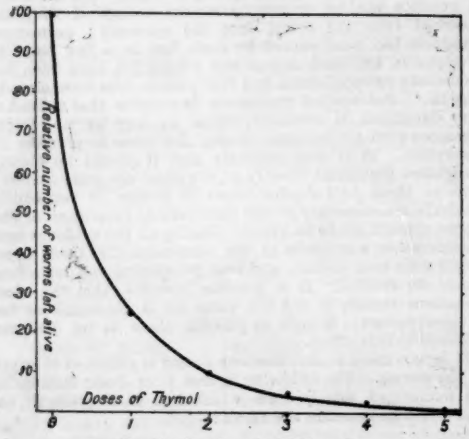
averages from 40 patients treated with thymol and 30 with β-naphthol.

Percentage of Total Number of Worms Expelled by Each Dose.

	Thymol.	β-naphthol.
First dose...	76·8	72·2
Second ,, ...	16·0	15·9
Third ,, ...	4·7	5·6
Fourth ,, ...	1·5	2·9
Fifth ,, ...	0·7	2·1
Total	99·7	98·7

In other words, after one dose on the average 255 per 1000 of the worms still remain, after two doses 95 per 1000, after three doses 44 per 1000, after four doses 22 per 1000, and after five doses 7 per 1000 (Fig. 1). Each successive dose, therefore,

FIG. 1.



Results of treatment with thymol.

kills 74, 63, 54, 50, and 68 per cent. of the worms present when it is given. Is this due to a natural variation in the original resistance of the worms or to an acquired tolerance? Since small doses will generally kill a few worms, there are reasons for thinking that some individuals are specially susceptible as a few others are specially resistant.

All these data refer to persons who have been exposed to constant reinfection. In the case of the Porto Rico patients, who were for the most part treated at home, the possibility of reinfection during the course of treatment cannot be altogether excluded. With hospital patients in Egypt it is possible that a batch of larvæ had entered the body shortly before treatment was begun, and thymol is relatively ineffective in killing young worms.[8] Hence these results may not be strictly applicable to cases suffering from only a single invasion of some standing. But it is quite clear from the experience gained in Cornwall and in Westphalia that more than one dose is generally required before the eggs disappear from the stools.

As to how far the failure to find eggs in the stools can be taken as definitely proving that the individual is entirely free from worms is an open question. Bruns's observation that about twice as many treated cases are found to be still infected if their stools are tested by culture instead of by direct microscopical examination requires serious attention, and renders it necessary to accept many data as to the effect of treatment with some reserve.

A great deal of good may be done by killing most of the worms without taking immense pains to eradicate them entirely. One or two dosings of thymol will generally restore an ordinary case of ankylostomiasis to such a degree of health that he will feel quite well and be capable of leading the ordinary life of an active working man, though in many such a residuum of worms will still be present in the bowel.

MEASURES TAKEN IN WESTPHALIA.

The treatment of endemic ankylostoma infection consists of a series of measures which are indicated unmistakably by our knowledge of the life-history of the parasite and of the conditions which determine its prevalence: killing out the parasitic phase by anthelmintic treatment of infected persons, prevention of reinfection of men by avoiding contact with infected places, killing out the saprophytic phase by making the conditions incompatible with the development of larvæ, preventing reinfection of places by regulating the disposal of fæces. As Perroncito says, the matter is settled. But how far these various measures are, on the one hand, practicable and, on the other hand, efficacious requires a good deal of further consideration.

The history of the progress and persistence of the infection in the Westphalian coalfield[9] furnishes probably one of the most complete accounts of the effect of measures taken against a parasite with a full knowledge of its life-history and of the circumstances which condition its existence. The first cases of ankylostomiasis among Westphalian colliers were observed in 1892, and up to the end of 1895 23 cases (two of them fatal) were recorded. In consequence of official regulations, after 1895 all colliers who showed any signs of anæmia were periodically examined for ankylostomiasis, and in this way Tenholt showed that the disease was scattered about among a number of collieries. The total number of collieries was 290, with about 190,000 underground workers in 1902.

Years.	Number of cases.	Number of collieries affected.
1896	107	16
1897	113	32
1898	99	24
1899	94	27
1900	275	42
1901	1030	65
1902	1974	108

Few of these men were seriously ill, though all of them were more or less anæmic; only five deaths in all from ankylostomiasis are known to have occurred. The marked increase in the number of cases beginning in 1900 coincided with the introduction of a system which made compulsory the watering of the roads in dry collieries in order to lay the dust and so reduce the risk of explosions. This produced conditions favourable to the development of infective larvæ, and the disease, which had smouldered for many years, flared up into a considerable epidemic. The number of cases of anæmia increased proportionately much more than the number of infected pits. This would be expected, since watering would only tend to spread the infection by putting into circulation, so to speak, a large number of heavily infected men. The increase in the number of mines producing cases of anæmia is, no doubt, partly due to this, but probably in greater part to declaration by "Wurmkranken" of an infection which had previously, under less favourable circumstances, been intense enough to give only "Wurmträger." The conditions, as far as wetness and warmth, were apparently as favourable in 1901 as in 1902; the considerable extension of severity in the latter year illustrates the progressive effect of the infection of an increasing number of men with increasing doses of worms. The increase was much the same in all the pits. The following table gives the figures for some of the larger and more heavily infected collieries:—

Number of Cases of Ankylostoma Anæmia.

—	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Lothringen	2	2	7	5	38	50	137
Erin	15	12	25	19	68	285	367
Hannibal	—	—	—	2	3	6	27
Julie	—	—	—	—	1	4	36
Graf Schwerin	9	12	11	9	33	378	427
Steingatt	21	6	0	6	7	12	84
Schamrock	—	4	4	17	41	199	402

At the end of 1902 the managements of nine of the larger collieries made arrangements whereby the whole of their men were examined. Though only 958 men were anæmic, eggs of the worm were found in the stools of as many as 6190. This discovery excited considerable attention, and

[8] Porto Rico Commission Report, 1904, p. 109.

[9] Report on Ankylostomiasis in Westphalian Collieries, by J. S. Haldane, Cd. 1843 (1903). Bruns: International Congress on Industrial Diseases, Brussels, 1910.

vigorous measures were taken in hand and a series of official regulations were made, of which the more important were as follows. No new hands were to be allowed to work underground until on microscopical examination the fæces had proved to be free from ankylostoma eggs. In each colliery at least 20 per cent. of the men employed underground were to have their fæces examined microscopically on three different occasions in order to ascertain the extent to which the various pits were infected. If a pit was known to be infected or was discovered to be infected by this preliminary investigation, the whole of the men were to be examined at the rate of at least 200 per week. Any man found to be infected was not allowed to return to underground work until he had been treated, if necessary on two or more occasions, and his fæces found by microscopical examination on three separate days to be free from eggs. The treatment was carried out in special hospitals erected for the purpose, the funds for this being provided by the Knappschafts-Verein, a wealthy union for sickness and invalidity insurance maintained under Government supervision partly by the men and partly by the colliery owners. People who felt quite well naturally did not like to be subjected to the prescribed process for eradicating their parasite, especially as it involved the very real hardship of losing at least three-quarters of their wages. After some trouble, however, the difficulty was to some extent surmounted by the collieries making up the allowance to all men under treatment to full half-pay. At the same time general sanitary improvements were effected. More, and more attractive, privies were provided on the surface, with an adequate supply of pails throughout the underground workings; shower baths were fitted up for the men on coming out of the pit in place of the common baths in which it was supposed that infection might spread.[10] Efforts were also made, though only in a few places, to disinfect the mud and water in the mines.[11] Finally, the whole process of holding an inquisition for ankylostoma in all the men and treating those infected was repeated periodically.

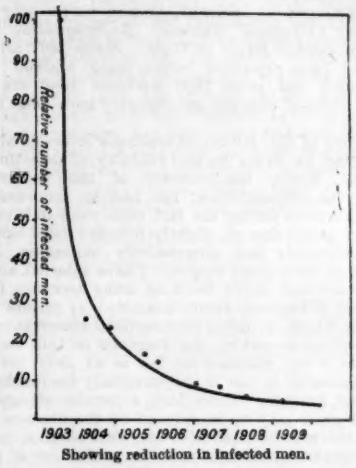
Such arrangements constitute a comprehensive attempt to stamp out the infection altogether. If none but men free from infection are allowed to work underground, the infection subsisting cannot at any rate increase, and must in course of time diminish owing to the natural death of the larvæ. The regulation of the disposal of fæces underground helps to prevent any infected men who have escaped detection transmitting their infection to others. The point which is obviously a weak link is the absence of any vigorous and united attempt to kill the larvæ underground. Their possible duration of life is such that, all addition to their numbers being prevented, the mine may remain infective for many months at least, and men from whom all worms have been expelled will be liable to reinfection on returning to work. As regards the prevalence of infection in 1903 the results of this campaign are as follows:—

District.	Number of workers.	Number infected.	Per cent.
Hamm	812	30	3·7
Dortmund I.	12,398	195	1·6
Dortmund II.	13,976	435	3·1
Dortmund III.	13,874	3,832	28·0
Recklinghausen East	11,223	1,126	10·0
Recklinghausen West	11,780	275	2·3
Witten	9,240	372	4·0
Hattingen	8,207	512	6·2
Bochum South	9,411	874	9·3
Bochum North	10,711	2,359	22·0
Herne	12,785	2,373	18·6
Gelsenkirchen	10,603	516	4·9
Wattenscheid	12,987	1,301	10·0
Essen East	10,917	157	1·4
Essen West	11,098	256	2·3
Essen South	8,378	1,197	14·3
Werden	1,316	210	16·0
Oberhausen	19,014	1,091	5·7
Total	188,730	17,161	9·1

With regard to the effect of treatment, Bruns (1910) gives the following summary, a good many men having been cured at the point where accurate figures begin to be available.

	Number of infected men.	Per cent.
May–October, 1903	14,548	100·0
February, 1904	3,663	25·3
November, 1904	3,288	22·6
October, 1905	2,352	16·2
December, 1906	2,103	14·5
January, 1907	1,366	9·4
August, 1907	1,111	7·6
April, 1908	895	6·2
March, 1909	749	5·2

FIG. 2.



Showing reduction in infected men.

The history of a single colliery—the Schamrock pits of the Hibernia Company—may also be given in detail, showing the rapid diminution which may be effected in 18 months,[12] though the pits were still infected in 1910.

Schamrock pits.	Date.	Number of men examined.	Percentage found infected.
First inquisition.	Dec., 1902–May, 1903.	2126	34
Second ,,	May–July, 1903.	2110	28
Third ,,	Aug.–Oct., 1903.	2045	17
Fourth ,,	Nov.–Dec., 1903.	2126	10
Fifth ,,	Jan.–Feb., 1904.	2205	8
Sixth ,,	March–April, 1904.	2215	6
Seventh ,,	April–May, 1904.	2086	4
Eighth ,,	July–Aug., 1904.	2000	3
Ninth ,,	Sept.–Oct., 1904.	2130	1½

In other words, after one year's work the number of infected men had been reduced by 75 per cent., after six years by 95 per cent. (Fig. 2). Cases of anæmia have not now been seen for a long time, and the disease itself, apart from the procedures taken to cure it, causes no industrial inconvenience. In mines which were at first particularly severely infected, the reduction has been especially well marked: at Schamrock from 37 per cent. of all underground workers to 0·5 per cent., at Erin from 80 per cent. to 4 per cent., at Graf Schwerin from 80 per cent. to 4 per cent., at Julia from 20 per cent. to 0·8 per cent. At the beginning about 1 man in 10 in the whole district was infected, now only 1 man in about 200.

RESULTS IN WESTPHALIA.

I am not in a position to state even approximately[13] how much has been expended in producing this result, but it is evident that the examination of fæces, provision of hospitals and staff, sick pay for workmen, and the various sanitary improvements must have consumed a great deal of money. The results which have been obtained at the present time are

[10] It is very doubtful if washing is of much use as a prophylactic measure. The larvæ appear to penetrate the skin very quickly. French opinion, however, supports the efficacy of washing (Colliery Guardian, May 15th, 1908).

[11] Bruns: Münchener Medicinische Wochenschrift, Nos. 2, 3, and 4, 1905.

[12] Bruns: Münchener Medizinische Wochenschrift, 1905, No. 22.

[13] The examination and treatment of each miner is said to cost about £4, which alone accounts for about £150,000. In the first nine months of 1903 £60,000 were spent in all, plus about an equal sum spent by the mine-owners.

these: (1) that sickness has been abolished, and (2) that the infectivity of the mine has been considerably reduced. But it is important to note that the infection has not been eradicated and as far as this is concerned the campaign has failed in its main object. For so long as a few infected men remain, and any chance of their depositing infected stools underground continues, it would be possible to relax the periodical hunts for "Wurmträger" only at the risk of a repetition of the disaster of 1900–01. The history of these very mines shows that when the conditions became favourable infection spread rapidly. These favourable underground conditions still remain. If, therefore, precautions were withdrawn, the improved habits of the men are the only obstacle to another widespread outbreak. Re-importation of infection from outside seems unlikely. Since 1897 all foreign men have been examined before being allowed to work underground, and since 1900 workmen from the heavily infected mines of Belgium and Hungary have been excluded altogether.[14]

The cause of the failure to eradicate infection altogether is attributed by Bruns to the difficulty of detecting slight infections. Bruns, the director of the bacteriological laboratory at Gelsenkirchen, has had an immense experience on this point during the last eight years in Westphalia, where the proportion of slightly infected men has always been considerable and progressively increasing, and his opinion must carry great weight. I have referred already to his discovery that about twice as many men are found to be infected if their stools are examined by culture as when reliance is placed on direct microscopical examination. The chief objection to making the diagnosis in this way is that the answer is not obtained for five or six days, but if it is found practicable to use it systematically the results should be of great interest. Apart from a paucity of eggs, other sources of error may be introduced by the absence of eggs for about two months after infection, their absence for a time after anthelmintic treatment and the production of supposititious fæces, though this last fraud has been prevented. The examination of the leucocytes is, of course, of no value in these cases.

MEASURES IN BELGIUM.

In the Belgian coalfield, with its centre at Liége, a campaign has been carried on along much the same lines and with the same idea that the infection might be stamped out altogether. The difficulties, as Malvoz points out, were more considerable in Belgium than in Westphalia. When the campaign was started in earnest, 26 per cent. of the underground workers were infected—i.e., twice as many proportionately as in Westphalia, and it was necessary to undertake the hygienic education of a population 20 per cent. of whom were illiterate and whose independent spirit, traditional in the Walloons, rendered them rather fretful against official regulations. Above all, in Belgium there was no wealthy Knappschafts-verein. However, the periodical examination of men and treatment of those found infected have led to much the same sort of result as in Westphalia.

	Number of men working in each group of mines.	
	1902	1909
Mines with 0– 5% of men infected	6,830	16,170
,, 5–10% ,, ...	3,380	5,740
,, 10–20% ,, ...	5,150	4,410
,, 20–50% ,, ...	6,060	300
,, 50% and over ,, ...	5,680	0

In all, then, from 26 per cent. in 1902 the percentage of infected workmen fell to 11 per cent. in 1906 and to 4 per cent. in 1910, and along with this considerable reduction in "ankylostomés" there has been a disappearance of "ankylostomiasiques." The failure to eradicate infection altogether or even reduce it to the level reached in Westphalia is no donbt largely due to inaccurate diagnosis of slightly infected men. The Belgian authorities attribute it also to the difficulty of introducing a proper system of underground privies, the ill-will of the men in using such conveniences as have been provided, and the difficulty of expelling the worms quite completely from some individuals. As in Westphalia, reliance has been placed almost entirely on male fern, and thymol has never been given a proper trial. The available evidence, as has been mentioned above, is strongly in favour of thymol being the better anthelmintic of the two, and, curiously enough, it is in the continental coal-fields that the most conclusive proof has been obtained that a moderate excess in the dose of male fern is not a little dangerous either to sight or life.

The main conclusion which may be drawn from the history of these two campaigns against ankylostoma infection is that it is impossible to completely stamp out infection from heavily infected mines by methods at present available which do not include any practicable and efficacious means of destroying the saprophytic phase in the mine itself. The enthusiastic prophecy of Calmette and Breton[15] has not been fulfilled. Writing in 1905 they say: "In Westphalia the number of infected miners has been reduced from about 18,000 at the beginning of 1903 to 2500 or 3000 at the present time, and the district will be totally freed from the epidemic before the end of 1905."

By energetic treatment and provisions for preventing fæcal contamination of the underground workings a great deal may be done without the elaborate apparatus which has been used in Westphalia. Thus at Brennberg in Hungary Goldman found 85 per cent. of the men infected in 1896, many of them being seriously ill. By 1898 the number had fallen to 47 per cent., in 1900 to 23 per cent., and in 1902 to 8 per cent. The problem here was somewhat more complicated, since a few cases occur among the general population as well as in the miners.

ANKYLOSTOMA INFECTION IN CORNWALL.

In Cornwall ankylostoma infection was first definitely identified in October, 1902, in underground workers in Dolcoath Mine at Camborne. It is impossible now to ascertain how and when infection was first introduced, but it seems probable that it came from tropical countries rather than from the infected continental mines. There is not much interchange of men between metalliferous mines and coal-pits. On the other hand, Cornwall is one of the chief centres of metalliferous mining and the manufacture of mining machinery in the world, and men are constantly going and coming from various parts of Asia, Africa, North and South America, and Australia. One meets, indeed, with men who have worked in mines, chiefly as experts in rock-drilling, in five continents. In many of these places ankylostoma is prevalent on the surface as well as underground, and it is easy to see how infection may have been brought. At Dolcoath the disease began to attract attention about 1895–96, and in 1897–98 the cases of severe anæmia were so numerous as to cause considerable trouble. Most of the cases seem to have arisen in men working in the main engine shaft ("New Sump shaft"), an upcast, warm and wet. At the beginning of 1900 artificial ventilation was introduced, by which means the temperatures in and round the New Sump shaft were somewhat reduced. Most of the bad cases gave up underground work; it is, indeed, extremely dangerous if not impossible for an anæmic man liable to fits of dizziness and faintness to climb about on the ladders and stages underground. Being removed from any chance of reinfection[16] by taking to work on the surface or away from the mine altogether, the great majority progressed more or less rapidly towards recovery, so that, for one reason and another, the disease had passed its worst when its nature was discovered in 1902 by Haldane.

Number of Cases admitted for Anæmia to the West Cornwall Hospital, Redruth.

1893	1	1898	23
1894	3	1899	12
1895	9	1900	11
1896	13	1901	7
1897	29	1902	8

At this time, however, cases of anæmia were still numerous enough. The general pallor of the men was very striking on looking at a shift as a whole, and complaints of shortness of breath on climbing the ladders were very frequent. Without anything like an exhaustive search among the 750 underground workers at Dolcoath, we found 14 men with less than 50 per

[14] Bréhon (Archives de Parasitologie, vol. ix., 1905, p. 540), among 118 men from Belgium applying for work in the coal mines in Pas de Calais, found 11 infected. Only about 1 per 1000 of the local miners were infected.

[15] L'Ankylostomiase, Paris, 1905, p. 101.

[16] As in Westphalia, Belgium, and Northern France, there has been no extension of infection to the general population in Cornwall, or even to those working on the surface at dressing ore, &c.

cent. hæmoglobin, and 19 more with less than 75 per cent. The disease, in short, was at that time a material hindrance in carrying on the work of the mine. Examination of men who had no symptoms of ankylostomiasis beyond "bunches" showed that practically every underground worker was infected. In the winter of 1903–04, of 65 men taken at random, 61, or 94 per cent., proved to be worm-carriers. Roughly speaking, therefore, 95 per cent. were infected and 5 per cent. were definitely ill—a severe infection. In the worst Westphalian mines 70–75 per cent. were infected, and at the most about 6 per cent. of those infected showed any clinical signs of anæmia.

STEPS TAKEN IN CORNWALL.

Among Cornish miners there is no trades union organisation or other provision for sickness and invalidity; wages are low, and till the rise in price of tin in 1906 the tin mining industry had for many years been greatly depressed; most of the mines did well if they paid expenses. It seemed, therefore, quite out of the question to undertake anything like the campaign initiated in Westphalia, though the total number of workmen concerned was only about 5000 instead of 190,000. The steps taken to combat the disease were therefore of the simplest kind. Once the nature of the disease was recognised it was, in the great majority of cases, very easy to cure those actually sick by the repeated administration of thymol. The effect of treatment has been almost entirely gauged by the obvious results; no serious attempt has been made to ascertain whether all the worms have been destroyed. Having been restored to a condition of efficiency, therefore, the men returned to work in a place which was still infected. They were, of course, reinfected again and again; any return of symptoms was noted at once and corrected by a dose of thymol. In this way actual sickness from ankylostomiasis has been practically abolished. At the same time steps were taken to introduce sanitary reforms underground. In 1905 a special rule was established by the Home Secretary for metalliferous mines in Devon and Cornwall that—

> The owner, agent, or manager shall cause a sufficient number of suitable sanitary conveniences to be provided above and below ground, in suitable and convenient places, for the use of the persons employed, and to be constantly kept in a clean and sanitary condition, and no person shall relieve his bowels below ground elsewhere than in those conveniences.

In 1904 such sanitary appliances were actually in use in Dolcoath in the form of loose pails which could easily be brought to surface, emptied, and cleaned. On the occasion of an inquiry in 1908 it was found that these pails were properly used, and there was an immense improvement in the conditions underground, it being almost impossible to discover loose fæces anywhere. The general appearance of the men was quite different, and there was none of the general anæmia which had been so noticeable five years before. On carefully going through two-thirds of the underground hands, we could only find one case of anæmia, in the person of a boy who said he felt quite well. A special investigation was made of persons who had come to work in Dolcoath since the introduction of underground pails, and who had not previously worked underground anywhere, or only in mines which were known to be free from ankylostoma. Of 89 persons, mostly boys, who came in this category, 68 (76 per cent.) were found to be infected, and most of them gave a history of having had "bunches" on one or more occasions. This shows that, though now there is no material illness, there has been relatively little reduction in the probability of a fresh worker becoming infected. Larvæ must therefore still be pretty widely spread in the mine, but their abundance has evidently been a good deal diminished. "Bunches" have become less frequent and less severe, and the diminution of illness is not altogether attributable to early diagnosis and treatment, since there has been a great reduction in the number of cases requiring treatment. This confirms the view that severe illness is generally due to massive and repeated infections.[17]

From the point of view of industrial efficiency the same result has been obtained in Cornwall as in Westphalia, and at a small fraction of the cost and trouble. In neither place does the disease now interfere in any way with work, except for the loss of time during compulsory treatment under the German system. But the German system has this great advantage—that it has within a few years very largely reduced the number of men who are capable of carrying the infection to fresh places. This result could not be obtained under the Cornish system except after a very long time. Except in so far as their habits of defæcation may have been educated, any dozen men from Dolcoath are at the present time not much less likely to infect any suitable mine to which they may go than they were eight years ago.

Most of the other important Cornish tin-mines are grouped with Dolcoath in the neighbourhood of Camborne and Redruth. There has always been a free interchange of workmen between Dolcoath and these other mines. But even before the nature of the disease was recognised, there was much less illness in them and no trouble was caused by the presence of infection. At the height of the epidemic, indeed, Dolcoath obtained such an evil notoriety among the men that many of them left to work in the neighbouring mines which general experience showed to be healthy. No systematic examination has been made of all the mines, but as regards the larger workings it has been ascertained that infection is present and that it has failed to spread because they are on the whole not so deep, cooler, and in some instances drier than Dolcoath. The number of infected men found is as follows:—

Mine.	Percentage of underground hands infected.		
	All men.	Men who had worked in Dolcoath.	Men who had not worked elsewhere.
East Pool	—	—	47
South Crofty ...	—	—	18
Grenville	24	47	15
Tincroft	25	50	9

In West Kitty mine at St. Agnes, a shallow, cold, and dry mine, we found only one man infected; he had recently returned from the gold mines in Mysore. In Levant mine at St. Just, a deep, hot, and wet mine, infection is prevented by the salinity of the water.

ANKYLOSTOMA IN THE TROPICS.

It remains to consider what can be done to combat the disease in the tropics, where the severity of its incidence is in many places far beyond anything met with in Westphalian or Cornish mines. Though the importance of ankylostomiasis as a factor in tropical industrial life has been well known for many years, the extent of its ravages does not appear to have been sufficiently recognised. Professor J. Cadman, who is familiar with the disease in Cornwall, tells me, for example, that the workmen in the pitch diggings in Trinidad are for the most part in a wretched state of ankylostoma anæmia, and it is hardly to be expected that efficient manual labour can be done under these circumstances. But the only serious attempt which has been made to combat the disease is the campaign started in Porto Rico after its occupation by the United States in 1898.[18] In 1899 Ashford found that the prevalent anæmia was due to ankylostoma and not to malaria and bad food as had been commonly supposed. From 1890 to 1899 about 15 per cent. of all deaths were attributed to "anæmia," and following the hurricane of 1899, with its destruction of houses and excessive rainfall, out of 35,781 deaths 11,885 (33 per cent.) were from anæmia. In 1904 a commission was appointed to deal with ankylostomiasis, consisting of P. G. Igaravidez, W. W. King, and B. K. Ashford. On inquiry it was found that at least 90 per cent. of the peasants were infected, and generally so heavily that they were markedly anæmic. About half the agricultural population (i.e., some 300,000 persons) appear to have had 50 per cent. or less hæmoglobin. Thus in one series of 343 cases blood examination showed:—

Hæmoglobin.	Persons.	Hæmoglobin.	Persons.
Below 20%	17	60–69%	32
20–29	64	70–79	20
30–39	78	80–89	8
40–49	75	90–100	3
50–59	46		

This is in marked contrast to the degree of anæmia found

[17] In consequence of the sinking of a new shaft and some rearrangement of the ventilation the deeper part of the main shaft has lately become a down-cast and the temperatures have been correspondingly reduced.

[18] Reports on Anæmia in Porto Rico, San Juan, 1904, 1905, 1907; Journal of the American Medical Association, vol. liv., 1910, p. 1757.

among Belgian coal-miners. Of 200 cases recorded by Herman and Dascotte[19] only two had less than 60 per cent. hæmoglobin.

Hæmoglobin.	Persons.	Hæmoglobin.	Persons.
Under 50 %	1	70-79 %	71
50-59	1	80-89	103
60-69	7	90-100	17

The peasants worked mostly on coffee plantations and were strangers alike to latrines and boots. The moist, warm soil was saturated with fæces in the neighbourhood of their houses. Having established the overwhelming importance of ankylostoma, the commission in 1904 treated 5490 cases with thymol, partly in hospital, but mostly as dispensary outpatients. Of these, 48 per cent. were cured, 31 per cent. improved, and 0·5 per cent died, while 19 per cent. were lost sight of. With such encouraging results the treatment was in subsequent years carried out on a larger scale. Thus in the year ending June 30th, 1907, there was a central station with 34 dispensaries in different parts of the island. Patients attended at these stations, had their stools examined, and received appropriate anthelmintic drugs, which were in nearly all cases taken away and consumed at home. A week later the stools were re-examined, and so on till eggs were no longer found or the patient ceased to return. In this way 89,233 patients—i.e., 11 per cent. of the whole population—paid 425,131 visits to the dispensaries: in 30 per cent. the clinical type of disease was slight, in 43 per cent. moderate, and in 27 per cent. severe. The results were as follows:—

Cured	22,936	= 25·7%
Practically cured	15,507	= 17·4
Under treatment	36,132	= 40·5
Ceased to return	14,451	= 16·2
Died	193	= 0·2

Under the heading "cured" are included only those cases whose fæces failed to show eggs and whose blood was restored to a normal condition as judged by the hæmoglobinometer. The "practically cured" group comprises those who had had four doses, a treatment found by previous experiments to expel 96 per cent. of worms. Those who "ceased to return" were doubtless also benefited by such treatment as they had.

Treatment consisted of 60 grains of thymol in two doses with sodium sulphate as a purgative. Each patient received with the medicine a card with the following instructions:—

Anæmia Commission of Porto Rico.

Take one of the two purgatives given to you to-night.
Take at 6 o'clock to-morrow morning half the capsules.
Take the other half at 8 o'clock the same morning.
Take a purgative at 10 o'clock.
You should neither drink wine nor any alcoholic liquor during the time you are taking these medicines.
Come for more medicines until the physician says you are cured.
Have a privy in your house. Do not defecate on the surface of the ground, but in the privy.
Do not walk barefooted so that you may avoid contracting mazamorra in your feet. Wear shoes, and you will never suffer from anæmia.

[19] Bulletin de l'Académie Royale de Médecine de Belgique, vol. xxii., 1908, p. 75.

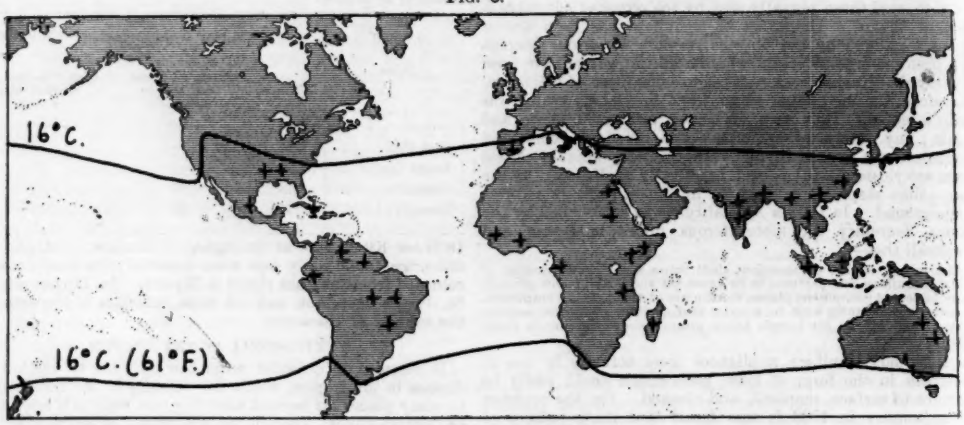
The following table summarises the work done in 1904–09:—

—	New patients treated.	Number of visits.	Number of deaths.	Amount spent.
1904-05	5,490	22,000	27	£991
1905-06	18,865	76,896	67	2,162
1906-07	89,233	425,131	193	9,823
1907-08	81,375	472,407	93	11,390
1908-09	54,725	305,598	46	6,472
Total ...	249,688	1,302,032	426	£30,838

Since 1909 Dr. Ashford tells me that the total number treated has reached just about 300,000, of whom the great majority (over 90 per cent.) have been turned from sick into well persons at a cost of about 2*s.* 6*d.* apiece.

It is, of course, hopeless under these conditions to attempt directly to kill off the worm altogether either in men or in the soil. But Dr. Ashford and his colleagues, besides contributing a great number of valuable observations on the pathological and medical aspects of the disease, have given a convincing demonstration of the possibility of minimising the ill-effects of infection. By reducing the number and intensity of infections and by regulating the disposal of fæces the infectivity of the soil will in course of time become very much less; the introduction of the habit of wearing boots should to a large extent prevent the access to man of what larvæ still persist (Fig. 3). It is much to be regretted that similar operations have not been undertaken in other places where, as in Trinidad, British Guiana, or Assam, the conditions are much the same.

FIG. 3.



Geographical distribution of ankylostoma.

NORTH STAFFORDSHIRE INFIRMARY, STOKE-ON-TRENT.—During the year 1910 the whole of the rules of this institution have been thoroughly reviewed. It has been decided also to add to the honorary medical staff two assistant physicians, two assistant surgeons, and one additional medical officer for the electrical department. Early in this year Dr. John Russell, one of the assistant honorary physicians, and Dr. Reginald Alcock, one of the assistant honorary surgeons, were appointed to the senior staff. The following additional appointments have been made: Assistant physicians: Dr. G. H. Sowry and Dr. E. C. Myott; assistant surgeons: Dr. H. Hartley and Mr. E. E. Young; additional medical officer for the electrical department: Dr. A. H. John. A department for the ear, nose, and throat has also been instituted, and is now under the charge of Dr. W. C. Allardice, the senior honorary assistant surgeon.

ABSTRACTS OF

The Morison Lectures

ON

INSANITY.

MELANCHOLIA, THE DEPRESSIVE PHASE OF MANIC-DEPRESSIVE INSANITY.

Delivered before the Royal College of Physicians of Edinburgh on March 6th, 8th, and 10th, 1911,

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LECTURER ON MENTAL DISEASES IN THE UNIVERSITY OF EDINBURGH AND PHYSICIAN-SUPERINTENDENT OF THE ROYAL EDINBURGH ASYLUM.

LECTURE I.

Delivered on March 6th.

THE DIFFERENTIATION OF MELANCHOLIA.

UNTIL recently the term was employed in a too inclusive sense, accounting for more than a third of all the patients admitted into asylums. Not all patients who suffer from depression are now diagnosed as such, it being restricted to those patients in whom painful or depressed feeling is the primary and fundamental disorder of the mind. Secondary depression, as in systematised delusional insanity of persecution, even were the patient to attempt suicide, is not diagnosed as melancholia. Nor is delirious melancholia or delirious insanity of an anxious type (e.g., delirium tremens) true melancholia. It is a toxic or acquired insanity, with general mental disorder, confusion, and hallucinations, and runs a different course. It is found that melancholia is often associated with mania. There is often a *stadium melancholicum* at the beginning of mania and a period of mild maniacal exaltation at the end of melancholia. Kraepelin conceived the idea that mania and melancholia are different but equivalent manifestations of the same underlying disease process, just as the various phenomena of epilepsy are similarly related. *Folie circulaire* confirms this hypothesis, and also affords a key to the recognition of the symptoms of this form of insanity, which should conform to its symptoms. *Folie circulaire* is a relapsing or periodic disease, and if a patient who has had melancholia is followed through life it is found he also has relapses with irregular periodicity. Alternation also exists, as some of these relapses are usually of mania. In the sane phases of *folie circulaire* recovery is complete and there is no tendency to dementia or enfeeblement of the mind. Similarly, the duration of melancholia may be uncertain, but recovery when it comes is complete. The absence of a dementing process differentiates melancholia from the depressive types of dementia præcox, in which it is the fundamental and outstanding symptom. Lastly, in *folie circulaire* there is no external cause for the recurring attacks, and in many cases of melancholia none exists either. It is an idiopathic form of insanity, largely due to the inheritance of an unstable nervous system. The lecture concluded with a lantern demonstration of the expression in melancholia, analysed in accordance with Darwin's hypotheses. Some of the illustrations were taken from Sir Alexander Morison's classical work on "The Physiognomy in Mental Disease."

LECTURE II.

Delivered on March 8th.

THE SYMPTOMS OF MELANCHOLIA.

Disease is not a separate entity—a something apart which invades the body and declares its presence there by phenomena of its own. Such a conception is a vestige of the crude doctrine of "possession." The symptoms of disease are the natural functions of the body, performed in an unusual way, the result of unusual physical conditions of a harmful nature. Our text-books are not free from error in this respect, as some authors still divide the varieties of insanity into "homologous and heterologous," the former having symptoms which are natural and the latter symptoms which are unnatural. In truth, they are all natural, and every symptom met in mental disease can be traced more or less closely to corresponding phenomena in a state of health, of which, according to Maudsley, they are a caricature. It is particularly necessary to accentuate this fact, because the mystery which belongs to every obscure disease becomes intensified when associated with insanity. The next statement is a corollary of the above, that the rational way of studying the symptoms of disease is to study them in association with the corresponding functions in health. Melancholia being primarily and fundamentally a disease of depressed or painful emotions, depressed or painful emotions as they occur in health should be studied as a key to its symptoms.

EMOTIONAL CONDITION—POSITIVE SYMPTOMS.

All cases of melancholia suffer from feelings of a painful nature and this is at once evident to the observer from their facial expression, their attitude, their gestures, or their melancholic ejaculations or groans. If they be asked whether they feel depressed, they will at once admit the fact. The exact shade of painful feeling varies greatly in different cases in the same way as normal feelings of this kind vary. They range from feelings of dulness, gloom, despondency, and misery to feelings of fear, apprehension, anxiety, and fright. However much these feelings may vary, they are all alike in being of a painful and melancholic nature. They can, however, be divided into two groups as Darwin indicated long ago in his "Expression of the Emotions." There is a passive group of which despondency is a type, in which the expression is dull, the attitude is flexed and relaxed, and the patient sits silent and motionless. There is, secondly, an active group, of which anxiety and fright are types, in which the person may be restless and even agitated, and may constantly repeat melancholy phrases or utter loud cries. The phenomena of these two groups overlap, and the symptoms in the same patient may pass from the one variety to the other at different periods. It is nevertheless a useful differentiation, for it explains the relationship of symptoms which are superficially very different from one another. The principal feature of this painful feeling is the fact that it is not a natural reaction to an exciting cause in the environment, such as would produce painful emotions in the mind of a healthy person. It is an internal or subjective condition the result almost certainly of activity in those same groups of cells and fibres, which subserve the production of painful states in health. This functional activity is the result of a morbid process which affects these cells and fibres either directly or indirectly and reflexly. This much is certain, that the gloom of the melancholic darkens his life as independently of his mental environment as the heavy clouds that may darken his outlook on a sunny day. It comes unbidden, and its source is a mystery to the patient; he only feels that in an unaccountable manner all joy and brightness have departed from his life and that a settled gloom or anxiety has taken up its abode in his mind for ever. His very delusions, as will be described, are attempts to explain or to account for its presence.

The depression in melancholia as a general rule develops slowly over a period of weeks and even months, gradually becoming more profound and more continuous. It may, however, come on suddenly in the course of a few days after some exciting cause or as suddenly without any known cause. When fully developed it is continuous the whole day long and may not leave the patient for a moment for months at a time. During the period of commencing recovery the first signs of improvement show themselves in the evening, by a lifting up of the gloom. Then there are good days as well as bad days, and finally the depression disappears altogether. Recovery may, however, take place from melancholia as suddenly as its development, and the patient may go to bed as depressed as usual and find himself well on waking next morning. The period of convalescence is one of great danger if the supervision of the patient has been relaxed owing to his improvement. A relapse of the depressed feeling may occur nearly as suddenly as an epileptic fit, and if the opportunity presents itself he may then commit suicide. One of my female patients after being apparently well for a fortnight relapsed suddenly one Sunday morning on hearing the church bells ring.

It is impossible for us to realise accurately the depth of

the misery of the melancholic. They certainly sometimes describe their feelings in a most dramatic manner—one told me lately he felt as if he were in hell, another as if he was looking down the bottomless pit, and a third that his feeling of horror was indescribable and that he would be a thousand times better dead. On the other hand, from its duration some are inclined to think that the misery cannot be so profound as it seems, and that the expression of it must be largely automatic. Most melancholics think that no one ever suffered as they do, and they all say that they will never get well again. A patient who has had numerous attacks, himself told me that in spite of the fact that he had recovered so often before, he could not understand how it was possible ever to get well from such depression as he was then suffering.

EMOTIONAL CONDITION—NEGATIVE SYMPTOMS.

A state of depressed feeling is the fundamental symptom in melancholia, which must be due to a morbid activity of certain cells. Associated with this there is an inactivity or paresis of function of other cells, for all the other emotions and feelings seem to be inhibited or paralysed. The melancholic patient is unable to enjoy anything or even to take an interest in anything. He ceases to derive any pleasure from his former pursuits and occupations and he shuns the society of his friends. His very love of life itself is lost. Patients are quite conscious of this failure in their interests and affections and often say that their nature has changed and that the world is a totally different place to them now. A patient told me he was "a perfect brute because he did not care a rap what happened to his relations." Women have frequently told me that they were unnatural or inhuman fiends because they had no love for their husbands or children. A remarkable detail about this paresis of the emotions, which is somewhat unexpected, is the fact that it affects emotions of a painful character quite as definitely as any of the others. A striking illustration of this was the case of a governess who was the oldest member of the family. Her mother had died and she had brought up her youngest brother, being much older than he, and she had acted to him as a mother as well as a sister. She became melancholic, and when she was in this state her brother died. She told me she felt absolutely no sorrow on account of his death, which want of affection appeared to her to be so inhuman that she concluded she must be the devil. When melancholic patients suffer bereavement the friends are often afraid to communicate the fact to them lest it should add to their depression. In most cases, owing to the paresis of feeling that exists, it can be done without danger. One of the earliest symptoms of convalescence is a return of interest in what is going on, which may be observed long before the depression has passed away. A female patient will, for example, show some interest in her dress and in her appearance which till then she has not done. The other day I was informed that one of our patients had shown signs of commencing recovery because, although he had with difficulty been made to join in a game of cards, when told it was time to retire he demanded "no trumps all round." This morbid subjective activity of one series of cells in the realm of the emotions, associated with a diminished response of other cells to objective stimuli, is the physical counterpart of the mental phenomena in melancholia, described as "the rise of subject consciousness" and "the failure of object consciousness." The subjective and purely internal feelings of depression become more and more intense and obtrusive and occupy the whole of consciousness to the exclusion of all objective and environmental sensory impressions. This is no doubt partially due to the fact that we give full attention to only one thing at a time, but it is also probable that an actual inhibition is exercised over some functions of the brain.

THE INTELLECT.

We regard the intellectual phenomena met in melancholia as being always secondary to the emotional. In proof of this we meet cases of pure affective or emotional melancholia in which the intellect is not appreciably injured; cases in which there is a morbid dread or gloom but little or no impairment of the intellect. It is quite certain that the emotional condition is not secondary to delusions because in a large proportion of cases of melancholia there are no delusions at all to act as the depressing cause. In those cases in which delusions are present and are believed by the patient and his friends to be the cause of the melancholy, it will be found that the depressed emotions existed before the delusions had developed. All the intellectual phenomena about to be described can be observed in a sensitive person who is temporarily overwhelmed with grief or sorrow by a great bereavement. In the first place, all the ideas of a melancholic patient are gloomy ones. I do not here refer to definite delusions, but to his opinions and views about things in general. He looks at everything from the dark side—not a ray of sunshine lights up his mental landscape. He does not meet trouble half way, he goes the whole way and creates it for himself. He is a wet blanket and is objected to by every sensitive person because his conversation, poor as it is, is so depressing. This feature of melancholia is, of course, easily understood. Whenever we experience an emotion nervous energy overflows into the intellectual areas, and there stimulates those ideas which are in harmony with it. Melancholy ideas thus predominate in the mind of the melancholic man, just as the jealous man thinks of his wife's unfaithfulness and the frightened child of ghosts and burglars.

In the next place there is a marked sluggishness in the flow of ideas, commonly described as retarded ideation, and associated with this sluggish flow there is a poverty or diminution in their number. These symptoms make themselves evident in many ways. It is a slow and laborious process to carry on a conversation with a case of melancholia. Replies to questions are only elicited by repeated inquiry, and these answers are monosyllabic or of the most simple and direct character, and the patient himself does not initiate any new subjects of conversation. In a large number of cases the patient is quite mute and never speaks at all. This condition of sluggishness and poverty of the ideas in melancholia is vividly shown up by contrasting it with the flight of ideas found in the converse state of mania. There the patient talks incessantly, his ideas flow with such speed that his power of speech cannot overtake them, and their number and their range give brilliancy and imagination of a sort to his remarks. Melancholic patients are quite conscious of this impairment of function. They find attending to their work a labour and they write their business letters with difficulty and in an unsatisfactory manner. I have known a highly educated clergyman take hours to revise a short essay of two pages "On Temperance" written by a child 12 years old. They have also often told me that their thoughts would not come, that their brains would not work, and that they would never be fit for business again.

These intellectual symptoms in melancholia are possibly secondary to the lack of interest that exists and due to the failure to receive the emotional stimulus which is so helpful to thought. On the other hand, there may be a direct inhibition exercised over the ideational functions producing the sluggishness, the poverty, and the restriction in their range which we have described. These intellectual phenomena are all found in a lesser degree in normal melancholy and sorrow.

There are other features of the intellectual state which are important from a diagnostic and differential point of view. In the first place the melancholic patient does not suffer from mental confusion. He realises fully where he is, the identity of those about him, and the lapse of time. There are therefore no signs of disorientation, such as exist in all the delirious types of insanity. Nor are there any signs of mental enfeeblement. His answers, though simple, when he does deign to reply, are coherent and sensible, and he does not make silly, childish, and inconsequent remarks such as occur, for example, in dementia præcox. The patient's memory is not so good as usual, and he sometimes complains that it is poor, but there is no real impairment of memory. Owing to a lack of interest in his surroundings new impressions may not be imprinted on his mind so deeply as in a state of health (anterograde amnesia), and owing to retardation of ideation his recollection of past events may be slow and imperfect (retrograde amnesia). When he recovers, he nevertheless remembers the chief incidents that have taken place during his illness, which distinguishes it from delirious insanity. Attention suffers, like memory, from lack of interest, and this is one reason why most melancholic patients make poor subjects for treatment by hypnotism. The intellect of the patient suffering from simple melancholia is, however, not seriously affected, and this is shown very definitely by the remarkable insight

he possesses of his own condition, which is superior to that shown in any other form of insanity. The patient himself usually consults a doctor, and may enter a mental hospital voluntarily to seek protection from the danger of suicide. These intellectual phenomena which I have already described are seen best in passive melancholia, but there are others of a different character, which are seen in greatest perfection in the anxious or active varieties of melancholia.

It has been pointed out that when we suffer from an emotion nervous energy overflows into the intellectual areas and stimulates those thoughts which are in harmony with it. In melancholia this discharge may find a path to a special train of thought on a certain subject, the result of which is that thoughts on this subject are never absent from the patient's mind. The thoughts may be on any subject of a depressing kind, on his sins and wickedness, on his ruined reputation, on his intemperate habits, on his sexual errors, or on particular incidents which he magnifies in importance and to which he attributes his melancholy. These are not delusions because they have not yet crystallised into the definite shape taken by delusions, nor do they carry the complete conviction that is a feature of delusions. They are the saturated solutions in which delusions may form. These patients tell us that they are troubled by their thoughts, that their wicked thoughts keep running in their minds and give them no peace, and that they cannot get rid of them. I have seen a patient shaking her head rapidly from side to side to get rid of them, and others bumping their heads violently to knock them out. The most vivid description I have had of the process was from a lady, who told me that it reminded her of a squirrel in a cage with a revolving wheel, and that her thoughts revolved in a similar manner round the same subject all day long.

This condition of monotonous and continuous ideation demonstrates that two nervous processes are taking place. That the field of ideation, which was restricted in typical passive melancholia, has here become contracted within much narrower limits. In the next place, within this contracted zone ideation is no longer retarded but excited. In typical cases of anxious melancholia this limited excitement may become very marked, and such patients may become nearly as talkative as cases of mania. Their talk has not the discursiveness, range, and fancy found in mania and they harp away on one subject till their audience is bored to death and sick of them. This tendency to monotonous ideation is also present in physiological states. In grief the ideation may be restricted to the bereavement sustained, but on this one subject the ideas may flow with remarkable freedom, while on all others sustained thought is impossible.

DELUSIONS.

At this stage we begin to notice those signs of intellectual disorder which culminate eventually in the development of actual delusions. The subject round which the patient's ideation revolves cannot be discussed by him in a sane way, be it a general question of his morality, honesty, or sobriety, or be it a particular incident connected with these. He repeats himself continually and asks the same question over and over again, not only many times in the same conversation but day after day for weeks. He completely fails to appreciate the force of any arguments. He cannot get away from his own standpoint or look at the question from any other point of view but his own. Finally, actual delusions are developed—that is to say, the patient holds beliefs which are recognised by all other people to be false, and these beliefs are incorrigible, for he continues to believe in them in spite of a complete demonstration of their error. There is no doubt that the presence of delusions denotes a great increase in the degree of mental dissolution, and therefore the classification of melancholia into simple melancholia and delusional melancholia is a useful and a scientific one.

The whole interesting and important subject of delusions is thrown open to us in an inquiry into delusional melancholia, but I can only refer briefly to this in its special relation to melancholia. The observation of Griesenger may be accepted as correct that the delusions found in melancholia are generally explanatory in character. The patient feels profoundly depressed, there is no obvious or adequate cause for this depression, and he naturally seeks for an explanation satisfactory to himself. He runs over in his mind the usual causes which produce depression and anxiety. He thinks of his past life in the light of religion, of his conduct and how this has affected his reputation, of his health and his prospects of life, of the anxieties of family life, of business difficulties and financial worries, and of the "thousand ills that flesh is heir to." Which one of these will form the subject matter of his delusions will depend upon the special circumstances of the moment and upon his own idiosyncrasies, and which one be selected is a matter of no importance. The man who has immersed himself in business and whose anxieties have been financial will probably develop delusions of ruin and bankruptcy. The mother whose worries have been domestic, and who has devoted herself to her family, will imagine terrible things about them. The religious-minded man or woman will suffer from so-called religious melancholia, and the valetudinarian, or the person suffering from a chronic or incurable disease, will suffer from hypochondriacal melancholia. It is quite a mistake to suppose that religious melancholia is more incurable than other forms, and these distinctive names for different delusional types are of no value except for purposes of description. Many of them are ephemeral and depend upon the habits and fashion of the age. Thus the belief that one had been changed into an animal, usually a wolf, was common in the Middle Ages, and to this the name of lycanthropia was given. Nebuchadnezzar no doubt suffered from a variant of this type, but it is almost unknown now. Demonomania, or the belief that one was turned into a devil, is fast disappearing owing to the neglect with which the personality of the Devil is treated in our pulpits. The important point to remember is that the delusion is the explanation the patient has adopted for his melancholy condition. The patient, for example, has asked himself, Why am I depressed? I am as depressed as if I had committed the unpardonable sin and had been forsaken by God. I feel I must have committed the unpardonable sin and been forsaken by God. That is the reason why I am depressed. The relatives of a patient unfortunately adopt his view that the melancholy is the result of the delusions whatever they may be, although our analysis of the condition has demonstrated the contrary to be the case. They look upon his condition as a mental state rather than as a disease, and they fancy that if the patient will only give up his delusions, which, being unfounded, they think should not be difficult, he will thereupon immediately recover. They endeavour to remove these delusions and invite the doctor to assist them with his arguments. Now, a delusion not being founded on a basis of reason, as sane beliefs are or ought to be, but resulting from morbid changes in the brain, it is as absurd to think of removing a delusion by the exercise of the powers of speech as to convert by this means a Babinski reflex into a normal one. If a delusion be apparently removed as the result of argument and persuasion it may be taken as a sign of commencing recovery. The friends can be assured that when the depression, which is really the cause of the delusions, passes away the delusions will also disappear, and only then.

HALLUCINATIONS.

We pass now to the senses and to the question whether hallucinations exist in true melancholia. In the majority of typical cases they undoubtedly do not, but in a few cases hallucinations of hearing apparently exist but play a very subsidiary part. Even here their existence is doubtful, as it is possible that pseudo-hallucinations are often mistaken for true hallucinations. A true hallucination is one which sounds to the patient exactly like an audible voice coming from a particular direction or place outside of him, which he believes must be heard by other persons as well as himself. A pseudo-hallucination is often described by the patient as a message, communication, or impression conveyed to his mind, possibly in words, but not to be confounded with audible sounds. It is not of a nature to be heard by other people, and he will explain that its seat is internal. I have observed hallucinations in subjects who have been formerly alcoholic, and they may occur as superadded phenomena due to intercurrent toxic conditions or to states of exhaustion. Their presence, however, at all times is a suspicious sign, and if they be numerous, prominent, and a feature of the case, then it is highly probable that we are dealing with dementia præcox, systematised delusional insanity, or a melancholic variety of delirious insanity. In the old classification which included agitated melancholia of the type of delirium tremens under melancholia, no doubt hallucinations both of

sight and of hearing were frequently met. This type is, however, a toxic, acquired and non-periodic insanity, and is not included under manic-depressive insanity.

PSYCHO-MOTOR SYMPTOMS—EXPRESSIONS AND GESTURES.

The psycho-motor symptoms in melancholia are a compound of the voluntary and the automatic, in which the latter possibly predominate. The expressions, attitudes, and gestures should all be studied and present many interesting phenomena which cannot be entered upon here. It has already been said that the cases divide themselves into two great motor groups—the passive and the active. The groups overlap, and in a typical case of passive melancholia there may be a constant wringing of the hands and the occasional utterance of a groan of despair. Cases of passive melancholia are also subject to panics of fright when they become temporarily very excited, a state to which the name of raptus melancholicus has been given. In active melancholia, on the other hand, the excitement may be very great, and such cases at one time, when the term mania was synonymous with motor excitement, were called mania. The motor excitement in the two conditions is, moreover, quite different. The movements in melancholia, like the ideas, are monotonous and restricted, and consist of such movements as wringing the hands, uttering cries and phrases, walking up and down the room, or rubbing the scalp or some other part. All these movements are purposive in character as well as rhythmical and repetitive, and these features resemble very closely the analogous nervous state in the intellectual areas. In mania, on the other hand, there is a glorious exuberance of muscular force which overflows in every direction by every variety of movement.

A great insight is obtained into these phenomena in melancholia by a study of Darwin's "Expression of the Emotions." He traces the muscular movements known as expressions and gestures to the purposive movements of our ancestors under conditions which would produce feelings similar to those which they now express. He traces the expressions, gestures and restlessness of the active group to the movements habitually employed in a defensive struggle or headlong flight from danger. In the passive group he traces the expression and the relaxed attitude to the exhaustion and collapse following on a violent struggle or flight, in which the weaker animal had only managed to escape with life.

VOLITION AND CONDUCT.

The most important symptom in melancholia from a sociological point of view is disorder of volition and conduct. In so far as the morbid feeling of gloom or anxiety is concerned this symptom is a purely medical one which interests the patient himself and his own physician. When, however, the realm of conduct is invaded, then the disease becomes of social importance and the laws of the land take notice of it. It is only when this happens that the term insanity can be properly applied to melancholia. It is, further, not till the conduct is disordered to such a degree as to be dangerous to the life of the patient or others that he can be certified to be insane and a suitable case for an asylum. The prevailing symptom of this kind is defect of will power and a failure to perform those acts and duties which are expected of a sane person in the position of the patient. This result is what might be expected. Our acts are largely determined by our desires and aversions, and if, as in melancholia, the patient has no likes or dislikes, nor any interest in anything, the emotive power is absent. The conduct in melancholia is, therefore, of a negative kind, and is characterised by faults of omission, by a failure to do the things that ought to be done. In the early stages the patient is conscious of the greatest difficulty in getting through the routine duties of the day; he then neglects to perform certain daily tasks. Later he stays indoors and will not go out, and finally he refuses to get out of bed. This failure may be of any degree and varies in details, but in its complete form the patient stays in bed, refuses to put on his clothes or go out to work, and finally even refuses to take any food, and would starve himself to death. This paralysis of the will power, or aboulia, to a greater or a lesser extent influences every act that the melancholic patient performs. One illustration is, however, sufficient. The sister of a patient of mine lately timed him with a watch putting a letter into a pillar-box, and it took him exactly ten minutes to post it. This was not due to a struggle against a neurasthenic obsession, but simply to an absence of a compelling force or desire.

Associated with this aboulia or defect of will power there is an extraordinary condition to which Dr. Clouston has given the name of resistiveness. If any attempt be made to rectify the failures of the patient, such as to dress him or to feed him, he does not remain a passive agent under these attentions, as might be expected, but resists with all his might till he is exhausted. This resistance, however determined it appears, is quite meaningless, because, after having resisted with all his strength having his clothes put on, he will then resist having them taken off. He will resist being taken out for a walk, and then resist being taken in again. The condition is obviously automatic, and the explanation of it may be found in Darwin's hypothesis, that the expressions of melancholia are derived from the defensive acts employed in resisting an enemy.

Extreme restlessness is a feature of melancholia of the active or anxious type. It would appear that so much energy overflows from the emotional to the psycho-motor areas in these cases that the patient feels an irresistible craving for movement. A patient told me he could neither sit, stand, nor lie, but must keep on the move. Another never sits at his meals, but takes them walking up and down his room on a pathway he has worn in the carpet. A third finds it impossible to sit at morning prayers and breakfast only, but later in the day can control herself. A patient who was doing his best to control this symptom told me he suffered agonies in his efforts to suppress this craving for aimless movements. He described them as the fidgets or jumps, and he told me that he felt inclined to bite, scratch, squeal, to make unnatural noises, and to throw things about. Of extreme examples of this loss of self-control Dr. Clouston writes: "The patients rush about, are violent to those about them, wander ceaselessly, walking up and down like tigers in a cage, or roll about on the floor, or wring their hands, or shout, or groan, or moan, or weep loudly, or tear their clothes, or in their cries, attitudes, or motions express strongly their mental pain. In short, the muscular expression of the pervading emotion is strong and uncontrollable by volition." Hughlings Jackson has said that anxiety is "only fright spread out thin"; we may extend this conception each way and say that the restlessness of active melancholia is only the distorted echo of many a desperate struggle that took place in the history of the race.

There exists one symptom of disordered conduct in melancholia, the most serious and important of all, which is not an act of omission but of commission. I refer to suicide. In the absence of all joy in life or desire to live, suffering the tortures of the damned and without any hope of relief, it is not surprising that oblivion is frequently sought in death. The frequency of the attempts to commit suicide does not, however, bear any relation to the frequency of the desire to end life. This is, I believe, present in every case of melancholia at one stage or another during its course, and the only safe rule to follow in the care of melancholic patients is to act on the assumption that it is always present. That suicide is not more often effected is due to the aboulia or defect of will power to which I have already referred. In addition to attempting to commit suicide the active or anxious melancholic is guilty of perpetrating other acts that he should not do. He is destructive, destroying books, plants, and clothing; he is irritating to the other patients by many annoying habits; and he is exceedingly troublesome to the nurses by his obstinate and obstructive methods. These apparently selfish, wicked, and even degraded acts in melancholia are somewhat surprising, but if the symptoms of melancholia can be traced to the acts of an animal thinking only of its own safety, resisting an enemy, and regardless of all other considerations, their presence is explicable. So also the occasional homicidal tendencies that are present, though these are to a large extent due to delusions.

PHYSICAL SYMPTOMS.

The bodily health suffers greatly in melancholia, and the impression typical cases give is one of general malnutrition and deficient nervous energy. They almost always lose weight during the attack and the most reliable sign of commencing recovery is a gain in weight. The system which is most obviously at fault in melancholia is the alimentary.

The patient at an early stage suffers from loss of appetite and constipation. Digestion troubles are usually complained of and the tongue is found to be foul. Digestion is slowly performed owing to a deficiency of pepsin and an impairment of the movements of the stomach and there is a tendency to dilatation. How far all these symptoms are primary and how far secondary is a matter of doubt, but judging by the effects of natural grief on the appetite and digestion and Pawlow's experiments they are in all probability at an early stage largely secondary. These alimentary disorders undoubtedly influence the course of the disease, as their rectification by purgation and other appropriate treatment is often followed by immediate improvement. Breathing is shallow in melancholia. The action of the heart is feeble and the pulse is usually slow, but may be rapid. The blood pressure is usually high, and by some this is regarded as a symptom of primary importance on which the feeling of mental depression chiefly depends. In some cases there is œdema of the feet. The quantity of urine passed is diminished and so is the amount of urea. The temperature is usually found to be subnormal. These symptoms point to a sluggish metabolism and to impaired vitality.

The most important physical symptoms in melancholia are undoubtedly those referring to the nervous system. Most prominent among these is insomnia, which is an almost universal symptom and one of the most distressing. There is both a difficulty in going off to sleep, and a tendency to waken early. A curious phenomenon which is very common is for the patient to assert that he has not slept, while he actually has done so. This must be due to the sleep being of a restless, troubled character, in which the mind has never been absolutely unconscious and at peace.

The muscular system is, of course, involved in the expressions, gestures, and attitudes of melancholia, but in addition to this the motor functions are distinctly impaired. The movements are feeble and they are all slow. Speech is low, monotonous, and slow; the articulation is not crisp and all other movements are similarly affected. The handshake, for example, is flabby and wanting in character and vigour. It has been found by Stoddart that the accommodation even is weakened and that on recovery the patient can read smaller type than during his illness. He has also observed that the larger or trunk muscles tend to be rigid—a condition which is very noticeable in the muscles of the neck. It is thought by him that the defect of will power and the feelings of harm and opposition in the environment, which lie at the root of melancholia, have their origin in these impairments of motor function. The superficial reflexes are diminished.

Lastly, the sensory phenomena are equally important, and the paræsthesiæ to which melancholic patients are peculiarly subject often form the foundation of their hypochondriacal delusions. Most patients complain of feelings referred to the head, to pain, throbbing, fulness, heaviness, tightness, numbness, formication, or to feelings as if there was something inside the head, or the blood was boiling. Very many complain of feelings about the throat similar to the globus—of tightness, of swelling, of choking, and of a difficulty in swallowing. Others of feelings in the precordial region and epigastrium, of suffocation, of sinking, and of emptiness. Feelings of numbness and paræsthesiæ may exist in other regions of the body, and one of my patients informs me that he suffers from acute aches and pains all over his body, and that he feels very ill indeed. A very common delusion is the belief that the patient has no inside; another that his throat is closed and that he cannot swallow; and the explanation of these can with great probability be traced to these paræsthesiæ, which are often experienced in natural grief. A secondary delusion to the above is the belief of a patient of mine that his head is swelling in size, as all the food he eats goes there.

In melancholia delusions occasionally exist about the size and shape of the body and the position of the limbs, and it is surmised that there are likewise disorders of the muscular sense.

CONCLUSION.

The primary and fundamental symptom in melancholia is a feeling of depression or mental pain. The other mental symptoms appear to be secondary to it, and in all probability many of the physical phenomena are also secondary. It is believed that centripetal nervous impressions come from all the organs and tissues of the body, and these arise from the metabolic processes which occur in them during their functional and trophic activities. Although we are unconscious of these individually, yet these impressions in the mass are the basis of our feelings of well-being or of malaise as the case may be, and they form the background of our consciousness—the cœnæsthesis. In melancholia it would appear that accompanying a sluggish and defective metabolism, with diminution in the production of nervous energy, there was an organic feeling of ill-being, which was reflected in consciousness as a subjective feeling of misery or mental pain, without any exciting cause in the environment of a mental nature.

LECTURE III.

Delivered on March 10th.

MEDICO-LEGAL AND PRACTICAL CONSIDERATIONS RELATING TO MELANCHOLIA AND TREATMENT.

Sane depression differs from morbid depression or melancholia in being a natural reaction in intensity and duration to an appropriate exciting cause in the environment. In melancholia the depressed state is a departure from the normal of the patient without a cause, or if there be an alleged cause (which is not in reality the cause) it is out of proportion to it in intensity or duration or both. When the patient loses his power of control over his conduct, and conduct is dependent on mental symptoms and not on motives similar to those of other people or of himself when well, then the patient may be regarded as insane. The disease now has a social as well as a medical aspect, and its management becomes a medico-legal question. So long as the symptoms were solely personal and the conduct was unaffected, the condition was a purely medical one. When the conduct next becomes dangerous to the patient or to others, then he can be certified to be not only of unsound mind but a proper person for care and treatment in an asylum. Of all the forms of insanity melancholia can be certified at an earlier period of mental dissolution than any other, owing to the danger of suicide. Why medical men fail to do so is possibly owing to the erroneous belief that to be insane a person must have delusions, or owing to finding a difficulty in certifying to negative facts or failures of conduct. The danger of suicide is not sufficiently realised by the medical profession. A desire to end life exists at one stage or another of every case of melancholia. Every case is one of potential suicide, and to treat the remarks of a melancholic on this subject as unimportant and not being seriously meant is to incur a very grave responsibility. Many suicides are said to have suffered from neurasthenia, and it is feared that in some cases the disease from which they were suffering was melancholia. The two diseases are quite distinct. They resemble one another in the symptom of depression and in loss of will. In melancholia the depression is primary and continuous, but in neurasthenia it is paroxysmal and occurs only during the period of conflict with obsessions. In melancholia the loss of will power is due to a diminution of desire, while in neurasthenia the desire to act may be strong but the executive power to will the act is weak. Doubtful cases should be treated as cases of melancholia.

The lecture concluded with an account of treatment.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on March 17th. There were present: Dr. F. de Havilland-Hall, in the chair; Dr. J. Pickett, Mr. W. Thomas (Birmingham), Dr. J. W. Hunt, Mr. J. Brindley-James, Dr. M. Greenwood, Mr. J. F. Colyer, Mr. Frederick Wallace, Dr. F. C. Martley, Dr. Frederick S. Palmer, Mr. F. S. Edwards, and Dr. J. B. Ball. The business of the society during the early part of this year has been exceptionally good. The sickness claims, which are expected to be high at this season, have been moderate in number and for the most part of very short duration, so that the total amount of sick pay disbursed has been well within the expectation. Prospectuses and all further particulars may be obtained on application to Mr. F. Addiscott, secretary, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

THE DIAGNOSIS OF GALL-STONES.[1]

BY JAMES SHERREN, F.R.C.S. ENG.,
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THE recognition of the cause of pain in the right upper quadrant of the abdomen is a problem that continually confronts us and often baffles our diagnostic powers. Until recent years it was usual to look upon violent attacks of colic followed by jaundice as necessary to the diagnosis of gall-stones and as indicative of their presence. Judging from the late period at which many cases are sent for operation this view is still prevalent.

No one speaking on the subject of gall-stones can omit to pay tribute to the work done by Mayo Robson and by Moynihan in attempting to dispel this common error, and especially to the latter in pointing out the significance of the "prodromal" symptoms of gall-stones.[2]

Colic is a late symptom of gall-stones, and even when followed by jaundice does not necessarily indicate their presence. I wish to direct your attention to the diagnosis between the colic due to gall-stones and that due to moveable kidney and to the early symptoms produced by gall-stones, referred to the stomach and called "dyspepsia."

Although it is now many years since the occurrence of jaundice in association with moveable kidney was recognised, the impossibility in many cases of its differential diagnosis apart from operation is a subject which has not received the attention that it deserves. Surgeons generally seem to have overlooked or paid little attention to the subject. Mayo Robson in his book,[3] in the section on diagnosis, makes no mention of it, but in the section on kinking of the bile-ducts (p. 139) he states that "those cases of catarrh of the gall-bladder producing attacks resembling cholelithiasis without gall-stones but associated with a moveable right kidney, probably owe their origin to kinking of the bile-ducts due to dragging by the displaced kidney." Two cases are given in the appendix. Moynihan, in the chapter on differential diagnosis in his book,[4] under a list of the various diseases which may be confounded with gall-stones, writes: "Diseases of the right kidney, more especially calculus, or that intermittent kinking of the ureter or the vessels of the kidney which cause Dietl's crises." Later he writes:[5] "Renal colic or undue renal mobility upon the right side has in some instances caused a confusion in diagnosis." Neither under the heading of diagnosis nor in the chapter on jaundice in either work is an account given of the cases in which the symptoms are indistinguishable from gall-stones or of those with obstructive jaundice. Bland-Sutton[6] mentions the simulation of the colic associated with gall-stones by "sudden distension of the renal pelvis with urine (acute hydronephrosis) when the kidney is sufficiently mobile to allow the ureter to become kinked"; and again: "A mobile kidney will cause jaundice by dragging on the duodenum."[7] In the most modern text-book of surgery in the English language[8] in the article written by W. J. and C. H. Mayo, no mention is made of it. The only satisfactory account that I have been able to find is in Rolleston's exhaustive monograph.[9] He writes: "A floating kidney may not only produce symptoms like hepatic colic and induce jaundice, but the displaced kidney may readily be mistaken for a distended gall-bladder."

The association of jaundice with moveable kidney appears to have been first recorded by Brochin in 1854,[10] next by Litten[11] in 1880. Landau,[12] in his classical monograph, stated that he had observed it in three cases and wrote as follows: "It is, however, certain that women who have moveable kidneys are more prone than others to jaundice, but only because they more frequently suffer from gastro-duodenal catarrh ..... and because a moveable kidney not infrequently contracts adhesions to the gall-bladder." After this date isolated cases were recorded by Hale White,[13] Clennell Fenwick,[14] Maclagan and Treves,[15] Macpherson Lawrie.[16] In 1902 two important papers appeared which have been generally overlooked. J. Hutchinson, jun.,[17] described two cases in which obstructive jaundice due to moveable kidney was cured by fixation of the kidney, and demonstrated the cause of the symptoms. Marwedel[18] reviewed 14 published cases and reported four cases of his own bearing on the question, and in his summing-up states "A moveable right kidney may produce all the symptoms of cholelithiasis—colic with or without jaundice in the absence of diseases of the biliary passages." In 1908[19] I published a short history of two cases drawing attention to the difficulties in diagnosis, and in 1909 Sir Watson Cheyne[20] mentions it in a paper on Moveable Kidney. Cases of this nature appear to have fallen to the lot of the general surgeon particularly, for Sir Henry Morris[21] wrote: "Transient attacks of jaundice are said not to be infrequent, but I have never personally witnessed them."

Not only may the symptoms produced by moveable kidney simulate those due to gall-stones, but the two conditions not infrequently co-exist. I should like to illustrate some points by quoting cases that have been under my care.

The first was a woman, aged 22 years, whom I saw in May, 1903, with obstructive jaundice of a week's duration. She was married and had had three children. For eight months she had noticed a moveable lump in her right side, and had had a dragging pain on exertion. During the four months before coming under my care she had had three attacks of "biliary colic"; jaundice followed the last of these. Marked obstructive jaundice was present and the gall-bladder formed a definite tumour reaching to the mid-point between the umbilicus and ninth costal cartilage and the right kidney was moveable. I explored and fixed the right kidney. The jaundice gradually disappeared and the gall-bladder could not be felt 14 days after operation.

I am in the habit of teaching that obstructive jaundice with a distended gall-bladder in young women is usually due to mobile right kidney. The next case I saw in November, 1905.

A young woman, 26 years of age, was sent to me with a history of obstructive jaundice of five weeks' duration. For 18 months she had been having sudden attacks of pain in the right hypochondrium, accompanied by vomiting. She was markedly jaundiced. The right kidney was very mobile, but the gall-bladder was not palpable. I operated and found a shrunken gall-bladder with dilated common and cystic ducts. I removed 40 stones from the ducts, not one larger than a pea, and drained the common bile-duct. She made an uninterrupted recovery. As she complained of pain due to her mobile kidney I fixed this later, and she is now in perfect health.

I have quoted these two histories together as illustrating, first, a case in which before operation it could reasonably be supposed that the kidney alone was responsible for the obstructive jaundice. In the second case the gall-bladder was not distended and the diagnosis of stones in the common duct was made. It is probable that the moveable kidney was here a predisposing cause of gall-stones.

It is, however, unusual to find jaundice present. Less severe cases are more common. The following is an example of the usual type.

In December, 1908, I saw a woman, aged 46 years, with the following history. During the past five months she had had three severe attacks of pain starting in the right hypochondrium and passing round to the right, accompanied by vomiting. The first attack was followed by jaundice. I found a very mobile right kidney. The gall-bladder was not enlarged and there had been no urinary symptoms. I thought that the mobile kidney would account for all the symptoms, but was by no means certain. I followed out my usual plan and made a small incision through the right rectus muscle and explored the gall-bladder and biliary

[1] A paper read before the Hunterian Society on March 8th, 1911.
[2] Moynihan: Brit. Med. Jour., Nov. 28th, 1898.
[3] Diseases of the Gall-Bladder and Bile-Ducts, third edition, 1904, p. 230.
[4] Gall-stones and their Surgical Treatment, second edition, 1905, p. 176.
[5] Ibid., p. 179.
[6] Gall-stones and Diseases of the Bile-ducts, second edition, 1910, p. 183.
[7] Ibid., p. 180.
[8] Keen's Surgery, 1908, vol. iii.
[9] Diseases of the Liver, Gall-bladder, and Bile-ducts, 1905, pp. 546, 730.
[10] Gazette des Hôpitaux.
[11] Quoted by Landau, Moveable Kidney in Women, New Sydenham Society's Transactions, vol. cx., p. 288.
[12] Ibid., p. 299.
[13] Brit. Med. Jour., 1892, vol. i., p. 233.
[14] THE LANCET, Nov. 11th, 1899, p. 1296.
[15] THE LANCET, Jan. 6th, 1900, p. 15.
[16] Brit. Med. Jour., 1901, vol. i., p. 15.
[17] Practitioner, 1902, vol. lxviii., p. 186.
[18] Beiträge zur Klinischen Chirurgie, Band xxxiv., 1902, S. 478.
[19] Clinical Journal, Oct. 14th, 1908, p. 12.
[20] THE LANCET, April 24th, 1909, p. 1155.
[21] Surgical Diseases of the Kidney and Ureter, vol. i., p. 113.

passages. The gall-bladder was full of bile. As I was unable to empty it I opened it; no stones were present and its mucous membrane was healthy. I closed the gall-bladder and fixed the kidney and she has remained well.

It is a rule that should never be neglected in gall-bladder surgery that if the gall-bladder cannot be emptied so that even small stones could be palpated it must be opened and the contents examined. In this way I found calculi in two cases associated with moveable kidney that I should otherwise have overlooked. Among 13 cases in which symptoms suggestive of cholelithiasis were associated with a moveable kidney, all except one were women. Gall-stones were present in two only. In none had urinary symptoms occurred. In addition to these 13 cases I fixed the moveable kidney of a patient whose gall-bladder had been explored on the diagnosis of gall-stones two years previously. This was 20 months ago, and the patient has remained well since. I have also fixed the kidney of a patient in whom a biliary fistula existed as the result of draining the gall-bladder for "gall-bladder symptoms." The fistula closed after the kidney had been fixed.

With regard to the differential diagnosis, this is difficult, and, I believe, in most cases impossible. Even when the symptoms are due to moveable kidney alone, tenderness will be present in the gall-bladder region during the attack, and Murphy's sign may be marked; tenderness may also be present over the lower ribs posteriorly. When jaundice exists, the fact that the gall-bladder is distended should make us suspect that the moveable kidney is the cause. It must always be remembered that the two conditions may coexist. Rolleston[22] states that "the diagnosis depends on the detection of a floating kidney, for the symptoms, biliary colic and jaundice, are the same as those of cholelithiasis. If the symptoms persist after the floating kidney has been efficiently and successfully treated, it is probable that there is cholelithiasis in addition." There is no means, apart from operation, by which the diagnosis can be made. If the attacks are due to moveable kidney they rarely occur at night, while attacks of colic due to gall-stones frequently wake the patient in the early hours of the morning.

In operating upon cases of this nature in which the diagnosis is doubtful, a vertical incision should be made through the fibres of the right rectus muscle, the biliary passages examined, and the gall-bladder opened if necessary. If no stones are present the kidney should be fixed through a posterior incision. If stones are present, I believe that the kidney should also be fixed at the same time if the condition of the patient will admit of it. The results of treatment have been most satisfactory.

Difficulty is often experienced in the diagnosis of diseases of the stomach and duodenum from gall-stones. The symptoms produced by the presence of stones in the gall-bladder are called "indigestion," the underlying cause of which is often considered to be "gastritis," gastric or duodenal ulcer. It is not yet realised that indigestion is the most common first symptom of gall-stones. In looking into most of the text-books dealing with diseases of the stomach or duodenum or with gall-stones, I have been struck by the fact that the greatest stress is laid on the diagnosis when biliary colic occurs. But this is a late symptom. It is in the absence of these attacks and in the period before they occur that diagnosis is so urgently necessary for safe and efficient treatment, and in some cases so difficult.

Of English writers, Moynihan[23] alone has laid stress on these prodromal symptoms, and draws a distinction between biliary colic and pain apart from this and discusses the early symptoms. He says[24]: "The chief difficulty will be in distinguishing cases of duodenal or gastric ulcer from cholelithiasis. In some cases it is impossible." With this I am in absolute agreement.

Rolleston,[25] in discussing differential diagnosis, does not mention these cases. He states that the "pain of gastric ulcer has a direct relationship to food," so has the pain in certain cases of cholelithiasis. Again, "the pain of gall-stone colic is more to the right of the abdomen than that of gastric ulcer, and may be absent for long periods. That of ulcer constantly recurs after food." The pain in cholelithiasis may be after every meal, and in cases of chronic ulcer of both stomach and duodenum there are usually well-marked periods in which the patient is nearly or quite well. In another place he states[26]: "Indigestion is a frequent result of gall-stones, so-called irregular biliary colic not infrequently manifests itself as dyspepsia and may be due to adhesions between gall-bladder and stomach ..... continued indigestion should be regarded as an important factor in the production of gall-stones." Deaver and Ashurst[27] state: "Gall-stone colic and cholecystitis are usually sufficiently distinguished by their symptoms and physical signs, as well as by the extreme irregularity of the attacks of gall-stone colic, which bear no relation whatever to the ingestion of food, and which recur with no persistence after each meal, as does the pain due to gastric ulcer. Moreover, in the intervals of biliary colic the digestion is apparently in perfect order, and pain is absent."

It is quite evident that the importance of the digestive symptoms of gall-stones and the difficulties in diagnosis from diseases of the stomach has not been fully realised.

For the purpose of this paper I have gone through the notes of all the cases of gall-stones that I have operated on in the last two years—43 in number. Of these, 26 had had indigestion, for which they had been under medical care for long periods; one patient after being treated as gastric ulcer was sent into hospital on the occurrence of her first attack of colic as a case of perforated gastric ulcer. Another patient had had gastro-enterostomy performed without relief; at operation I removed 140 small stones from the gall-bladder and one from the common bile-duct. Of these 26 cases, 20 had had attacks of biliary colic after periods of indigestion ranging from 5 months to 40 years; in the majority of the cases the history of indigestion was of over 5 years' duration.

The "dyspepsia" falls into two groups: (1) those in which the symptoms suggest the prodromal symptoms of gall-stones; and (2) those rare cases in which a certain diagnosis from duodenal ulcer is impossible. Taking the groups in order, Group 1 is the more important, for I believe it is at this stage that the operation should be performed before biliary colic has occurred. Operation is free from risk while the stones are still in the gall-bladder and no complications have ensued. Out of the 20 patients upon whom I operated after attacks of colic following a long period of dyspepsia, in no less than nine had I to remove calculi from the common bile duct, and in three of these I removed stones from the hepatic ducts as well. The following is a typical case of dyspepsia due to gall-stones.

A man, aged 46 years, was sent to me in September, 1909, with a history of indigestion extending over 20 years. During the first 18 years this came on in attacks of from two to three weeks' duration with from two to three weeks' interval. The pain came on from half an hour to two hours after a meal, lasted four or five hours, was situated in the epigastric region, and was accompanied by a feeling of distension "as if he would burst." It was not associated with vomiting and was never relieved by taking food but often relieved by "belching." It often woke him at 3 A.M. There was never any colic. The condition had been treated as "gastritis" by lavage and as gastric ulcer. I diagnosed gall-stones on account of the feeling of distension accompanying the pain, and because of the time at which the pain woke him and the fact that the pain was never relieved by taking food. At operation I found the gall-bladder free from adhesions and containing hundreds of small calculi. The patient lost his gastric symptoms and has remained well.

Another example was the case of a man, aged 24 years, upon whom I operated in August, 1908, and who was sent to me as suffering from duodenal ulcer. For five years he had been having epigastric pain with a feeling of distension two hours after his meals. Until 18 months previously this was in attacks of about a month's duration at irregular intervals but had been present every day since. The pain was never associated with vomiting and never relieved by taking food. Ten days before I saw him jaundice was noticed; it came on painlessly and he had never had an attack of colic. On examination no tenderness was manifest except over the gall-bladder region; the gall-bladder was not felt. I diagnosed gall-stones and not chronic duodenal ulcer with obstructive jaundice. Had it been the latter, pain would

[22] Diseases of the Liver, Gall-bladder, and Bile-ducts, 1905.
[23] Gall-stones and their Surgical Treatment, second edition, 1905, p. 149 et seq.
[24] Ibid., p. 176 et seq.
[25] Diseases of the Liver, Gall-bladder, and Bile-ducts, 1905, p. 730.
[26] Ibid., p. 709.
[27] Surgery of the Upper Abdomen, 1909, p. 100.

have been relieved by food and the gall-bladder would have been dilated. At operation I found many adhesions around the gall-bladder which contained calculi and a calculus of the size of a cherry stone in the common bile-duct, which I removed after mobilising the duodenum. I closed the opening in the duct and drained the gall-bladder. The patient left the hospital a month later and has remained well ever since.

The special points in the dyspepsia due to biliary calculi are these: its association with flatulent distension; the frequency with which the patient is awakened at night; the pain is not relieved by taking food, and if associated with vomiting this may not relieve it, but vomiting is unusual.

Abdominal examination in these cases may settle the diagnosis; for example, in two of the cases upon which I operated before the onset of colic a distended gall-bladder was distinctly palpable. Tenderness under the right lower ribs is usually present and Murphy's sign may be elicited. Occasionally no physical signs exist.

There remains yet one other group of cases (Group 2) in which it may be impossible to make the diagnosis from a chronic duodenal ulcer. This is not as widely known as it should be. In a paper on Duodenal Ulcer[28] I divided the cases according to their symptoms into four groups: (1) latent; (2) those in which a definite diagnosis may be made; (3) those in which the diagnosis of peptic ulcer of stomach or duodenum may be made but the symptoms are not clear as to which exists; and (4) those in which the diagnosis is not possible until operation. It is in this last group that difficulties arise. I need hardly remind you that rarely duodenal ulcer may be complicated by jaundice and that duodenal ulcer and gall-stones may exist together.

A large proportion of all cases of duodenal ulcer give symptoms enabling a certain diagnosis to be made, the most important being hunger pain relieved by taking food and waking the patient in the early hours of the morning. In these cases the ulcer is in the first part of the duodenum. These symptoms are never produced by gall-stones. There are cases, however, in which the symptoms of gall-stones are mimicked closely by those due to an ulcer in the second part of the duodenum. Cases of this nature are, however, unusual.

Among the 46 cases of chronic duodenal ulcer that I have operated on before perforation had taken place the symptoms in three simulated those due to gall-stones and in these the ulcers were situated in the second portion of the duodenum. I have quoted one case in the paper just referred to; the following is another typical example.

A male, aged 55 years, was sent to me last September with the following history. Since the age of 21 he had been subject to attacks of severe pain in the right side, usually at night, not accompanied by vomiting, and not occurring sufficiently often to make him seek medical relief. After the first attack he had no others for ten years. Two or three months before I saw him he had had several severe attacks on following nights accompanied by vomiting. The pain doubled him up and made him sweat and retch. He never tried the effect of taking food because of the retching. In addition he had had for years attacks of discomfort from 2 to 3 hours after food relieved by belching. There was no night pain except with the severe attacks and never hunger pain. The patient was a strong healthy man, and the only physical sign was slight deep tenderness in the right hypochondrium. At the operation I found the gall-bladder and bile-ducts healthy and a large chronic ulcer at the junction of the first and second parts of the duodenum on the anterior wall. After inverting it, I did posterior gastro-jejunostomy.

The particular points in diagnosis that I wished to bring forward may be briefly stated as follows.

1. Attacks of "colic" resembling those due to gall-stones may be the result of moveable kidney or of duodenal ulcer. It may be impossible to make a certain diagnosis without operation.

2. In the majority of patients with gall-stones "indigestion" is present for several years before the first attack of colic. This indigestion has certain features which often enable a diagnosis to be made but is sometimes suggestive of gastric or duodenal ulcer. An attempt should be made to recognise the condition early, so that operation may be performed at the ideal time while the stones are still in the gall-bladder.

Devonshire-place, W.

[28] Medical Press and Circular, April 7th, 1909.

CONGENITAL ABNORMALITY OF THE HEART: A CASE OF COR TRILOCULARE BIATRIATUM.

BY JANE I. ROBERTSON, M.B. GLASG.

THE main anatomical peculiarities in this case of deformity of the heart are as follows: (1) dilated left auricle; (2) dilated sinus venosus; persistence of venous valves with marked hypertrophy of the right valve; (3) small right auricle; obliteration of tricuspid opening; presence of an inter-auricular foramen; (4) almost complete obliteration of right ventricle; (5) persistence of the bulbus arteriosus; presence of two interventricular foramina; (6) transposition of the large vessels, aorta in front arising from the bulbus arteriosus; pulmonary artery behind arising from the left ventricle; and (7) persistence of a patent ductus Botalli.

The heart is that of a nine weeks' infant born at full time but always weakly and cyanosed. For the age of the infant the specimen is of very large size; it is a broad, short heart, with a rounded apex which is formed entirely by the left ventricle; there is just the faintest indication of the outline of a small right ventricle high up on the right border. The persistent bulbus arteriosus, from which the transposed aorta arises, forms a marked prominence on the right anterior surface of the heart; to the left of the bulbus branches of the left (or anterior) coronary artery pass towards the right margin, apex, and left margin of the heart. The right auricular appendix is prominent, lying in front of the pulmonary vessel and overlapping the outer side of the bulbus; its tip is curiously bifurcated. Posteriorly the

FIG. 1.

Right auricle. In this illustration the interior of the right auricle is exposed from above and behind by an incision into the sinus venosus extending from the superior to the inferior vena cava. 1. Right auricle. 2. Left auricle. 3. Superior vena cava. 4. Inferior vena cava. 5. Coronary sinus. 6. Expanded valvular fold (right venous valve). 7. Flattened band of muscle circling fossa ovalis (left venous valve). 8. Point of junction of posterior ends of the venous valves. 9. Crista terminalis; junction of anterior ends of the venous valves. 10. Fossa ovalis. 11. Inter-auricular foramen. 12. Aperture of communication between sinus venosus and right auricle. 13. Limbus Vieussenii.

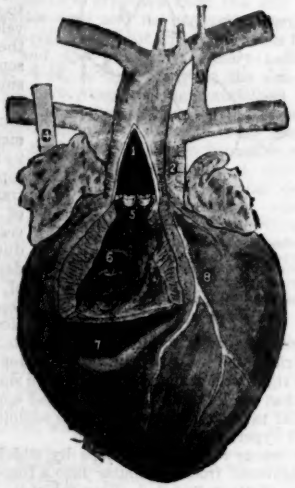
most striking features of this specimen are the great degree of dilatation of the left auricle and the wide space between the points of insertion of the right and left pulmonary veins. On the posterior wall of the left ventricle the branches of the right (or posterior) coronary artery run obliquely from right to left. The aorta arises from the persistent bulbus arteriosus in front and to the right of the pulmonary artery; it arches upwards and to the left, gives off the innominate, left common carotid, thyroidea ima and left subclavian arteries. It then communicates with the left branch of the pulmonary artery by means of a fairly large ductus Botalli and—immediately increasing considerably in calibre—finally

becomes the descending aorta. The pulmonary artery, which at its origin is markedly dilated, arises from the left ventricle behind and to the left of the aorta; it then divides into right and left branches, the latter communicating with the aorta by means of the ductus Botalli.

Right auricle.—The cavity of the right auricle (see Fig. 1) is divided into two compartments by a wide membranous falciform fold which stretches obliquely across it. (Fig. 1 (6).) The outer fixed border of the fold is attached along the whole length of the sulcus terminalis, the inner free border is very much shorter and irregular and is lost antero-superiorly on the crista terminalis just below and in front of the superior vena cava (Fig. 1 (9)), while postero-inferiorly it fuses with the inter-auricular septum some little way in front of the coronary sinus in the region of the obliterated auriculo-ventricular aperture. (Fig. 1 (8).) The cavity of the auricle is thus divided into two compartments, one situated obliquely above and behind, into which the three venous trunks open and whose inner wall is formed by the inter-auricular septum, the other placed in front and below and comprising the auricular appendix and the outer wall of the auricle, the two cavities being imperfectly separated by the falciform membrane. This membrane, therefore, forms a shelf-like partition whose short inner free border, concave towards the inter-auricular septum, leaves patent a comparatively small aperture by which communication is maintained between the two cavities into which the auricle is divided. (Fig. 1 (12).)

Below the opening of the inferior vena cava, to the inner side of the coronary sinus and a little behind the postero-inferior termination of the inner border of the falciform membrane, a small valvular fold is seen curving upwards, backwards, and to the left, flattening itself shortly against the inter-auricular septum and passing as a distinct slender band above the upper margin of the fossa ovalis, to be lost on the crista terminalis in the neighbourhood of the antero-superior termination of the inner free border of the falciform membrane. (Fig. 1 (7).) Thus the widely expanded fold on the right and the vestigial fold on the left, enclosing between them the openings of the three venous trunks, terminate apparently at approximately the same two points—namely,

FIG. 2.

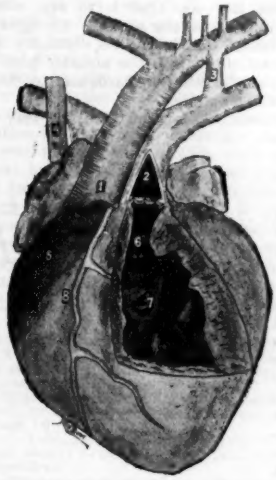


Infundibulum and right ventricle. In this figure part of the outer wall of the aorta and infundibulum have been removed, showing interventricular septum. 1. Cavity of aorta. 2. Pulmonary artery. 3. Ductus Botalli. 4. Superior vena cava. 5. Septum of the bulb. 6. Superior inter-ventricular foramen. 7. Slight prominence of right ventricle on outer wall of heart. 8. Left (anterior) coronary artery.

anteriorly on the crista terminalis below and in front of the superior vena cava and posteriorly in front and a little to the left of the coronary sinus. From this it would appear probable that the deformity here is due to a persistence and hypertrophy of the right venous valve (Fig. 1 (6)), the left valve being present as a vestigial fold, only slightly more evident than is usual in normal hearts. (Fig. 1 (7).)

The inner wall of the upper cavity is formed by the inter-auricular septum; the fossa ovalis is of large size and its floor presents curious arboriform markings. (Fig. 1 (10).) The foramen ovale is completely closed, but in front of it and of the limbus Vieussenii (Fig. 1 (13)) the inter-auricular septum is deficient to some considerable extent, the ostium primum being apparently persistent. (Fig. 1 (11).) There is, however, a small connecting band passing from the anterior auricular wall to the upper part of the lower border of the septum, thus dividing the inter-auricular foramen unequally into a small upper and a large lower part. There is no evidence of any septum below and in front of the inter-auricular foramen.

FIG. 3.



Pulmonary artery and left ventricle. In this figure the pulmonary artery and left ventricle have been opened from in front, showing the interventricular septum. 1. Base of aorta. 2. Pulmonary artery. 3. Ductus Botalli. 4. Superior vena cava. 5. Infundibulum and right ventricle. 6. Upper interventricular foramen. 7. Lower interventricular foramen. 8. Right (posterior) coronary artery.

There is nothing particularly noteworthy about the lower of the two auricular compartments, except the bifurcation of the tip of the appendix and the irregular arrangement of the musculi pectinati. The tricuspid opening is completely obliterated.

Left auricle.—The left auricle is very large, but this enlargement is entirely confined to the atrial part of the cavity, the auricular appendix being small; the right and left pulmonary veins open into the auricle posteriorly on either side. The walls of the dilated atrium are smooth and the cavity communicates with the right auricle by the large opening in front of the fossa ovalis; this opening, as previously described, is divided unequally by a narrow band at its upper part. The small auricular appendix communicates with the cavity of the auricle by a narrow tubular passage.

Right ventricle.—The right ventricle is rudimentary. On the outside of the heart it is just indicated on the right margin by a faint V-shaped groove, the posterior limb of which is the more distinct. (Fig. 2 (7).) The cavity of the ventricle is represented by a small irregular flattened space which terminates in two horns, the whole having approximately the shape of an inverted V. The obliterated tricuspid opening forms the apex of the cavity; from there it extends a little downwards and outwards, and communicates with the cavity of the bulbus arteriosus; at this point two rudimentary chordæ tendineæ bridge the slit-like cavity of the ventricle between the right wall of the heart and the interventricular septum. The right or posterior horn of the right ventricle then passes downwards and inwards for a short distance and terminates by communicating with the left ventricle through a small oval foramen situated posteriorly about half-way down the interventricular septum. (Fig. 3 (7).) This foramen passes obliquely from the right ventricle downwards and backwards, to open into the left ventricle immediately in front of the descending left limb of the auriculo-ventricular

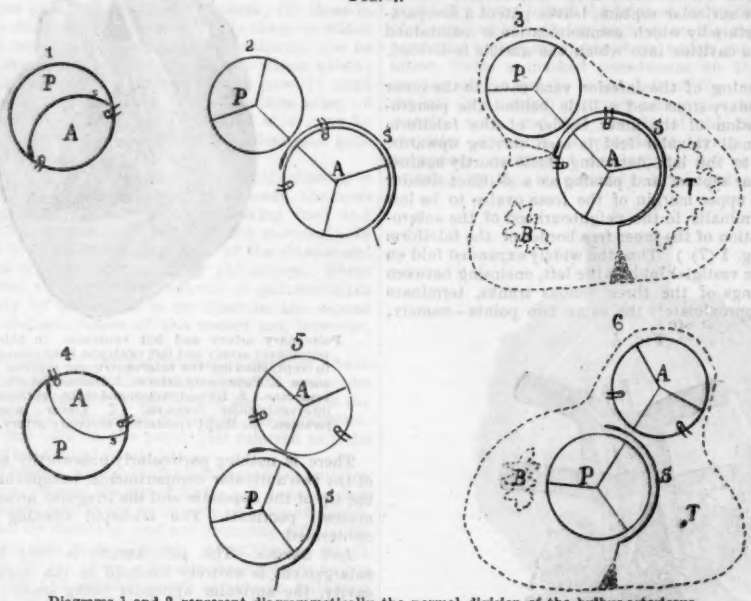
bundle (bundle of His), which is distinctly visible on the surface of the septal wall. The left or anterior horn of the cavity of the right ventricle arches, just below the bulbus arteriosus, over a thick band of muscle, and passes a short distance into the outer wall of the heart. Both these horns, which represent all that is left of the cavity of the right ventricle, are lined with endothelium, and on the inner or left wall of the anterior space a glistening band of tissue can be distinguished, which is probably the descending right limb of the auriculo-ventricular bundle (bundle of His). The relations of this rudimentary right ventricle are further complicated by the presence of a large inter-ventricular foramen at the upper and anterior part of the ventricular septum immediately below the septum of the bulbus arteriosus. (Figs. 2 and 3 (6).) Over the lower margin of this foramen—that is to say, over the upper border of the interventricular septum—the right limb of the auriculo-ventricular bundle can be distinctly seen passing, on the one hand, down into the anterior horn of the right ventricle, and, on the other, upwards and to the left to join the left limb of the bundle.

Bulbus arteriosus.—Compared with the rest of the heart the infundibulum (bulbus arteriosus) forms a proportionately large part of the right side. (Fig. 2 (5).) The infundibular walls are thick and muscular as far as the bases of the tricuspid valves; below the infundibulum communicates with the rudimentary right ventricle and to the left with the left ventricle by means of the upper interventricular foramen. (Fig. 2 (6).) The aorta itself is comparatively small; at its origin it lies in front and to the right of the pulmonary artery. (Fig. 2 (1).) The semilunar valves present no deformities, and are situated right anterior, left anterior, and posterior; the coronary arteries come off above the left anterior and the posterior cusps, these being the two in close relationship to the pulmonary artery—that is, immediately in front of the bulbar septum. The further course of the aorta has already been described.

Left ventricle.—The left ventricle is very large and its walls thick and muscular; the bicuspid opening is large, but the valves are normal, the papillary muscles are well developed; the pulmonary aperture is also large, but otherwise there are no abnormalities to record; the semilunar valves are large and situated left anterior, left posterior, and right. The interventricular septum presents the two foramina already described, one a small oval of about the size of a lentil on the lower posterior part of the septum, the other larger, of about the size of a pea, between the upper border of the interventricular and the lower border of the bulbar septum. The pars membranacea septi is present and complete and lies between and below the right and posterior pulmonary cusps. A little in front of and below the pars membranacea the left limb of the auriculo-ventricular bundle (bundle of His) appears on the left septal wall and can be traced almost to the apex of the cavity.

Course of the circulation through the heart.—The circulation of the blood through this heart may now be considered. The right auricle received venous blood from the superior and inferior venæ cavæ and the coronary sinus; there being no tricuspid opening the blood passed by the inter-auricular foramen into the left auricle; the left auricle received arterial blood from the pulmonary veins and venous blood from the right auricle, thence it passed by the bicuspid opening to the left ventricle. From the left ventricle this mixed venous and arterial blood took one of three courses: (1) a trifling amount may have passed through the lower interventricular foramen to the posterior horn of the rudimentary right ventricle, and thence by way of the infundibulum to the aorta; (2) a considerable proportion of the contents of the left ventricle would be discharged through the larger upper interventricular foramen directly into the infundibulum and so reach the aorta; and (3) by far the greater part of this mixed blood-stream would be thrown into the big pulmonary artery, which in turn, by means of the persistent ductus Botalli, would supply a considerable amount of mixed blood to the aorta. Thus in this case the systemic arteries never contained completely oxygenated blood.

FIG. 4.



Diagrams 1 and 2 represent diagrammatically the normal division of the bulbus arteriosus at its proximal end by the septum (s). Diagrams 4 and 5 represent the mal-position of the septum (s) and the consequent abnormal relations of the two vessels as present in the specimen under discussion. Diagrams 3 and 6 are amplifications of 2 and 5, showing the general relations of the apertures and cavities at the base of the heart, 3 in a normal, 6 in the present case. (After Rokitanski.)

The chief anatomical peculiarities presented by this specimen may be briefly summed up as being septal in origin, the closure of the tricuspid opening being due to a faulty development of the auricular septum (which subsequently involved a faulty development of the ventricular septum), the transposition of the great vessels being due to a faulty development of the bulbar septum. The closure of the tricuspid opening accounts for the rudimentary state of the right ventricle, and probably for the dilatation and hypertrophy of the right wall and right valve of the sinus venosus, and the fact that the left side of the heart had approximately double its usual task to perform accounts sufficiently for its dilatation and hypertrophy.

I may now briefly refer to the steps by which the fœtal heart is transformed from a tubular into a four-chambered organ with two distinct vessels leading out of it. About the end of the first month the common auriculo-ventricular opening is divided into two by the appearance of endocardial cushions on its anterior and posterior walls; as these cushions enlarge and finally fuse across the opening the inter-auricular septum grows downwards, forwards, and somewhat to the right and fuses with them; a little later the interventricular septum growing up from the floor of the common ventricle from left to right sends its posterior horn to fuse with the under surface of the endocardial cushions nearer the right than the left side of the cushions. Meanwhile, the distal part of the fœtal heart, the truncus arteriosus, has also been divided by a spirally placed septum which divides it laterally above and antero-posteriorly below. (Fig. 4.)

The distal end of this bulbar septum grows downwards and meets the upper anterior border of the inter-ventricular septum with which it fuses, while posteriorly the junction of the two septa is marked by the formation of the pars membranacea septi. The four chambers of the heart and the two great vessels are now completely separated.

In explanation of cases of obliteration of the tricuspid opening, such as that under discussion, Vierordt suggests an uneven division of the common auriculo-ventricular opening by the endocardial cushions which would more or less close the right half of the aperture. Kühne advances the theory that the descending auricular septum has been inserted into the right side of the auriculo-ventricular opening instead of into a central endocardial cushion, and the ventricular septum has later, as is usual, fused with the lower end of the auricular septum, the whole process being apparently an exaggeration of the normal left to right obliquity of the two septa. This fusion of the auriculo-ventricular septa with the right side of the auriculo-ventricular opening would effectually obliterate the tricuspid opening, but only at a date subsequent to the formation of the rudimentary right ventricle. This latter theory would seem to suit the case under examination when the tricuspid is obliterated, but there are distinct traces of a rudimentary right ventricle, although at first sight one would think the interventricular septum had entirely fused with the right wall of the heart.

The transposition of the great vessels may be explained as follows. According to Rokitanski the septum of the bulbus arteriosus should normally at its proximal end pass from the left posterior to the right anterior wall of the bulbus and have its concavity directed backwards. (Fig. 4.) As the septum passes up the lumen of the bulbus it twists a little on itself so that the two vessels which lie side by side at its distal end lie approximately antero-posteriorly at its proximal or cardiac end. Thus the septum divides the bulbus arteriosus into a smaller anterior vessel (pulmonary artery) and a larger posterior vessel (aorta) which lies a little to the right. Any deviation from the normal position of the septum, either as regards its points of contact with the walls of the bulbus or the direction of its concavity, materially affects the relative positions of the two great vessels which are so formed. (Fig. 4 (4,5,6).) In the case under consideration the bulbar septum at its proximal end must have extended from the left anterior to the right posterior wall and its concavity was directed forwards and to the right so that it cut off the aorta in front and to the right and the pulmonary artery behind and to the left. (Fig. 4 (4, 5, 6).) Further, the antero-posterior relations of the two vessels being maintained throughout no twisting of the bulbar septum on itself has occurred. This comparatively simple explanation would seem to fit in excellently with the anomalies under discussion, without any question of an abnormally exaggerated, diminished, or reversed torsion of the bulbar part of the cardiac tube having occurred. In this particular case, owing to the general inhibition of the development of the right side of the organ, the heart as a whole may have pivoted through a lesser angle than usually occurs when at a certain stage in development the posterior or venous heart (auricles) is carried dorsally and to the right, and the anterior or arterial heart (right ventricle and bulbus) is swung forwards and to the left. In fact, it is difficult to understand how a real torsion of the bulbar part of the heart ever occurs at all, and certainly it does not explain such anomalies of the great vessels as this case presents.

In conclusion, I have to express my great indebtedness to Dr. Ivy M'Kenzie, who placed this specimen at my disposal.

References.—Rokitanski, Vierordt, and Kühne as in Schwalbe's Morphologie der Missbildungen des Menschen und der Tiere, iii. Teil, iii. Lieferung, 2 Abteilung, 4 Kapitel.

Glasgow.

WORTHING HOSPITAL.—It has been decided that the erection by public subscription of the new out-patients' department in connexion with the Worthing Hospital will be a suitable and practical memorial to King Edward. In round figures the cost will be £3000. The work has already been commenced. There will be a waiting hall, two consulting-rooms, a surgery, dispensary, two dressing-rooms, and drug store on the ground floor, and five bedrooms on the first floor for nurses, with bathrooms, &c. The department will be connected with the hospital by means of a covered way.

SLIGHT GENERAL ENLARGEMENT OF THE THYROID GLAND AS FOUND IN SCHOOL CHILDREN.

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THE medical inspection of school children affords opportunities not hitherto obtained for the systematic examination of large numbers of children whose condition is so nearly normal that they would not otherwise have been examined by medical men. At the same time, the statistical work required for reports to the local education authorities allows comparisons to be made as to the relative frequency of a disease in various districts.

Whilst engaged in the medical inspection of school children in Warrington the relatively large number of cases of slight general enlargement of the thyroid gland forced itself on my attention. In these cases the enlargement of the thyroid was not connected with such symptoms as anæmia, mental hebetude, increase of the pulse-rate, fine tremors of the hands, or exophthalmos. A well-known text-book on diseases of children[1] states that in these cases of simple bronchocele the thyroid is sometimes painful and tender. However, the condition in the cases seen by me did not give rise to any pain nor was the gland tender.

The following facts indicate, in some measure, the relative frequency with which the condition is found in several districts:—

Brighton, 1908.—Goitre was met with in four cases (5068 children examined, i.e., 0·8 per cent.); in each the condition was one of simple parenchymatous enlargement. Several cases of thyroid enlargement associated with puberty in girls were seen.

Exeter, 1908.—Three cases of enlarged thyroid in boys (880 examined, i.e., 0·3 per cent.); 22 cases in girls (880 examined, 2·4 per cent.). Average percentage, 1·4.

Middleton, 1908.—Two cases of enlarged thyroid in boys (966 examined, i.e., 0·2 per cent.); 7 cases in girls (1004 examined, 0·7 per cent.). Average percentage, 0·45.

Burton, 1909.—Nineteen cases of enlarged thyroid (2820 examined, i.e., 0·6 per cent.). A slight enlargement of the thyroid gland was fairly common, especially in girls about the age of puberty.

Derbyshire, 1909.—Goitre was found in the following cases: 14 girls aged 5—i.e., 0·3 per cent. (4375 examined); 121 girls aged 13—i.e., 4 per cent. (3039 examined); 11 boys aged 5—i.e., 0·2 per cent. (4501 examined); 35 boys aged 13—i.e., 1 per cent. (3278 examined); total number of cases, 181—i.e., 1·2 per cent. (total number examined, 15,193).

In Warrington the medical inspection of school children has been carried out at the ages of 5, 7, 10, and 13 years approximately. The following table shows the number of children examined at the several ages, as well as the number, percentage, and degree of enlargement in either sex:—

Condition of thyroid gland.	Sex.	Number of cases.	Number of cases at several ages.				Number of children examined.	Percentage in which defect is found.
Slight degree of enlargement—i.e., gland forms slight prominence in neck; outline of whole of gland can be easily palpated.	M.	12	7 years	...	5		1372	0·36
			10 ,,	...	7		571	1·2
	F.	17	5 ,,	...	1		879	0·1
			7 ,,	...	4		1285	0·3
			10 ,,	...	12		487	2·4
Medium degree of enlargement—i.e., gland forms marked prominence in neck. Outline of whole of gland distinctly visible.	M.	18	5 ,,	...	1		886	0·1
			7 ,,	...	7		1372	0·5
			10 ,,	...	3		571	0·5
			13 ,,	...	7		1152	0·6
	F.	41	5 ,,	...	1		879	0·1
			7 ,,	...	6		1285	0·46
			10 ,,	...	17		487	3·4
			13 ,,	...	17		1136	1·4
Marked degree—i.e., gland about twice normal size.	M	7	7 ,,	...	2		1372	0·1
			10 ,,	...	3		571	0·5
			13 ,,	...	2		1152	0·17
	F.	2	10 ,,	...	2		487	0·4
Enlargement greater than above, forming well-marked goitre.	F.	1	13 ,,	...	1		—	—
Localised enlargement, forming well-marked goitre.	F.	1	10 ,,	...	1		—	—

Total number of cases—M., 37; F., 62 = 99.
Total number examined, M., 3982. Percentage with defect, 0·93

[1] Ashby and Wright: Diseases of Children, fifth edition, p. 821.

Total number examined, F., 3787. Percentage with defect, 1·61. Average, 1·27 per cent.

Number of cases at different ages.	No. examined.	Defect found in—
5 years 3	1765	0·17 per cent.
7 ,, ... 24	2657	0·9 ,,
10 ,, ... 45	1058	4·25 ,,
13 ,, ... 27	2288	1·18 ,,

The table shows that for the cases under consideration the condition is not most frequent at the age of puberty: 72 cases of the 99 occur below the age of 13. The pubescent state has often been stated to be coincident with the onset of enlargement of the thyroid gland. The above figures would seem to show that the cause of enlargement in a large proportion of the cases must be sought for elsewhere.

An analysis of various conditions which might be taken as indications of septic absorption—such as the presence of carious teeth, enlarged tonsils, sores, enlarged lymphatic glands—failed to show an increased special incidence in the cases under consideration.

Kocher attributes simple goitre to some peculiarity of the drinking water due to the soil through which it passes. This leads one to a consideration of the water consumed by the children in question. The drinking water of Warrington is obtained from deep wells passing into new red sandstone, the collecting area being formed of an outcrop of the same rock in the neighbourhood. A chemical analysis of the water shows the presence of the following mineral salts and their proportion:—

	Grains per gallon.		Grains per gallon.
Calcium carbonate	8·147	Sodium chloride	2·641
Magnesium carbonate ...	2·631	,, silicate	0·411
Ferric oxide and alumina	0·414	,, sulphate	0·641
		,, bicarbonate ...	0·190

Total mineral salts, 15·06 grains per gallon.

By the courtesy of Dr. J. M. Cowie, medical officer of health of Burton-on-Trent, I have been able to obtain particulars with reference to the drinking water in use in that district; it resembles that of Warrington in being a hard water. The water-supply is derived mainly from tubes in the gravel beds at Fradley, near Lichfield; but, also, water is used from shallow wells sunk in surface gravel, giving in some cases "a very hard gypsum water, which is almost entirely spring water from the underlying marl and sandstone beds." However, a very much greater number of the wells contain a water which is a mixture of the ordinary valley drainage with the very hard gypseous spring water above referred to (Lott). Chemical analysis of the public water-supply is as follows (grains per gallon):—

Calcium sulphate ...	23·7 grains.	Silica	0·74 grain
,, carbonate ...	4·66 ,,	Iron oxide (Fe_2O_3) ...	Slight traces.
Magnesium carbonate	4·79 ,,	Potassium chloride ...	Traces.
Sodium chloride ...	2·39 ,,	Calcium nitrate	,,
,, sulphate ...	3·85 ,,		

Total solids dried at 190° C., 40 grains per gallon.

The chemical constitution of the well water varies as stated above. The following results have been obtained from chemical analyses, which give in each column the average of 20 wells with total solids below 100 in grains per gallon, and the average of 20 wells with total solids above 100:—

	Below 100 gr.		Above 100 gr.
Calcium sulphate	21	.....	42
Magnesium sulphate	7	.....	16·8
Calcium carbonate	11·9	.....	14·1
Magnesium carbonate	3·5	.....	3·5
Sodium chloride ... ... } Potassium ,, ... }	7·7	.....	9·1
Sodium sulphate...	*Nil*	.....	*Nil*
Magnesium nitrate	4·2	.....	8·4
Difference—silica, alumina, iron, &c.... ...	0·7	.....	0·7
Total solids dried at 180° C.	57·4	.....	98·0

An examination of six of the families of the children affected showed that in three a similar enlargement of the thyroid was present in several of the other members of the family. The family in the case of a girl aged 13 exhibited in a marked degree the familial character sometimes assumed by the defect:—

Father	enlargement slight.
Mother	,, marked.
Boy, aged 15 years	,, medium.
Girl, ,, 14 ,, ...	,, slight.
,, ,, 13 ,, ...	,, medium.
Boy, ,, 10 ,, ...	,, ,,
,, ,, 4 ,, ...	gland palpable.
,, ,, 2 ,, ...	,, ,,
,, ,, 4 months ...	*nil.*

Thus, 8 out of the 9 members of the family were affected. The mother was much concerned at the enlargement of the gland in the case of the girl aged 13, and called in the family medical attendant. The local application of tincture of iodine every night for the first week and every other night for a fortnight caused a very marked reduction in the size of the gland.

In the family of another girl aged 13, three out of the seven members were certainly affected, while two of the others presented possibly some degree of enlargement. In the family of a girl aged 3 two sisters were affected—one, aged 22, markedly, and the other, aged 17, to a medium degree.

The chief object with which this paper has been written is to call attention to the fact that slight general enlargement of the thyroid is fairly common in some districts. The number of cases investigated unfortunately does not warrant any very definite conclusions. If, however, the investigation could be extended by observations on the subject, made in the course of routine medical inspection of school children in a fair proportion of districts, an amount of data might be obtained of sufficient value to aid in the elucidation of the etiological factors.

Warrington.

THE FADING OF ANILINE-STAINED MICROSCOPICAL PREPARATIONS.

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MOST microscopists have found, unless I am greatly mistaken, that many of their microscopic preparations when stained with aniline dyes and mounted in the ordinary way in Canada balsam have faded or lost some of their colour after a variable time. By the word "fading" I refer not to the loss of colour resulting from exposure to light but to that due to the medium in which the preparation is mounted. To me this has been a great trouble and has resulted in the loss of some of my rarest specimens. I began making and collecting blood films probably more than 20 years ago, and now not one remains that was stained eight years ago unless it had been stained with hæmatoxylin and eosine, which alters much less than the more generally used aniline dyes. Within the last eight years several very fine preparations have faded almost hopelessly, but I cannot bring myself to throw them away, whilst restaining and remounting old Canada balsam preparations is, at least in my hands, not very satisfactory. In all cases the preparations lose first their basic blue colour and the chromatin red colours; the eosine tint becomes fainter, but lasts the longest. I have, therefore, determined to try to find the cause and, if possible, a remedy.

I have found that films of blood, bacteria, &c., when stained with almost any of the aniline dyes fade, but especially so when stained with methylene green, thionin, methylene blue, or methylene blue and eosine, either separately or combined as in Jenner's stain, and all modifications of Romanowsky's valuable stain—e.g., Giemsa, Leishman, Wright, &c. This is more noticeable and earlier seen the more delicate the structure, and is especially marked in preparations of minute organisms such as spirochæta pallida. I find that all preparations do not fade equally quickly, probably because some of them were more deeply stained originally, and therefore do not show the effect of slight diminution in their colouring.

In my experience the fading is not necessarily most marked at the margins of the cover-glass, where one would

expect oxidation changes to more readily take place. I find that the margins of many of my preparations retain their basic colour longer. This would seem contrary to what Heidenhain's statement (mentioned a little later on) would lead us to expect; in fact, some films of blood containing the spirochætæ of relapsing fever, stained with Giemsa and mounted in Grübler's neutral Canada balsam in September, 1906, are even to the naked eye distinctly red in the centre of a large cover-glass, but bluish at the margins, and the spirochætæ can be readily found in the latter position with a one-third objective, whilst in the central area I cannot see any with one-twelfth objective.

Such has been my experience, and I have turned to various authorities for a solution of the cause and prevention of this trouble.

1. The late Dr. Louis Jenner, in a private communication dated March 25th, 1902, in reference to the fading of preparations stained with his eosine-methylene blue stain, says:—

> I now recommend in the printed directions Merck's Dammar lac in xylol for mounting. Canada balsam is an acid body and therefore produces fading. The commoner xylols also are not neutral. Grübler now sells a neutral xylol dammar which should be as good as, or perhaps better than, Merck's. This point about fading due to the mounting medium is important, as I hear the Greenwich Tropical School does not recommend the stain as it fades. My films mounted in a neutral medium are almost unchanged (a shade brighter perhaps) after two years or so. They have, of course, not been exposed much to light.

2. Colonel Sir W. B. Leishman, R.A.M.C. (then Major Leishman), about the same date wrote concerning his stain:—

> After many months (8–10) most of my films have shown very little sign of fading, but I am not satisfied with xylol balsam as a mounting medium and should be glad to hear of a good substitute.

3. The "Enzyklopädie der Mikroskopischen Technik," Giemsa, Grübler, and many other writers draw attention to the fading in ordinary Canada balsam, and advise the use of acid-free Canada balsam, especially after Romanowsky's stains. Gonders in the above work says:—

> Care must be taken to mount all preparations stained with Romanowsky's stain in acid-free Canada balsam, otherwise the characteristic staining will fade, and such preparations should not be dried over a flame before mounting as heat destroys the chromatin stain.

4. Many authorities recommend mounting preparations in immersion cedar oil in order to obviate the fading. On the other hand, Laveran[1] says:—

> Preparations keep better dry than mounted in balsam, and especially than in cedar oil, in which they are rapidly decolourised.

This has been precisely my own experience.

5. Martin Heidenhain,[2] in an article on the subject, states that all balsams are acid, they absorb air and oxidise; that Canada balsam destroys many stains, notably safranin. "I use neutral Canada balsam from Grübler, but have no knowledge how it is prepared or whether it is really neutral in a chemical sense." He says that it is most important to prevent oxidation, and for this purpose he always uses large instead of small cover-glasses; formerly he mounted with cover-glasses of a diameter of 18 mm., but now uses those with a diameter of 21–26 or 25–32 mm. He also uses as little Canada balsam as possible between the cover-glass and slide, and places a weight of lead or a spring on the cover-glass to keep it down.

6. Gustav Mann[3] says:—

> [He] prefers to mount in a medium having a low refraction index, but when doing so I am aware that lens in ordinary use have been corrected approximately for a refraction index of 1·520, which means that the refraction index of ordinary balsam is too high, that of water and glycerine too low.
>
> To ensure permanency of stains, especially coal tar products, it is absolutely essential to employ neutral mounting media which remain neutral; all prone to oxidation should be avoided. The thinner the balsam the greater the process of oxidation from air bubbles. The best solvent for neutral balsam (Grübler) is pure benzene C_6H_6. The 90 per cent. benzol of commerce contains about 70 per cent., whilst the 50 per cent. benzol contains about 46 per cent. of pure benzene. Pure benzene is sold as benzene free from thiophene; its chief disadvantage is its high refraction index, but this may be overcome by using dammar resin instead of Canada balsam.
>
> The greatest enemy to permanency of all stains is moisture—e.g., from hands or breath; therefore the cover-glass should be held in a pair of forceps, and care taken not to breathe on the preparation.

There is no doubt from the above expressions of opinion that the greatest cause of fading in balsam-mounted preparations is acidity, whether present at the time or developing subsequently from oxidation of the mounting medium.

I will here give a little further account of my experience. I have been using Grübler's neutral Canada balsam in xylol for the last ten years or more, and found that after a time my finest preparations were faded, often most markedly in the centre of the cover-glass. Was this due to acidity of the medium, or was the cover-glass itself acid? I should say that I always use films spread on the slide, not on the cover-glass, and from an optical point of view I have no reason to alter that procedure. The cover-glasses are cleaned by immersing them either in strong sulphuric acid, or in a mixture of sulphuric acid and bichromate of potash; and it may have been that they had not been sufficiently washed in water to remove all trace of the acid. This is a possible cause of the fading in the earlier preparations, but now I wash them in running water till the water is neutral or alkaline, as is always the case with tap-water. They are then placed in alcohol which is often changed. Still I had fading, and more pronounced and occurring sooner than ever. One day I placed some of this neutral Canada balsam in xylol (Grübler's) on litmus paper, and to my surprise found it very decidedly acid. I next tested the ordinary immersion cedar oil in use and found that, too, very acid; but when I tested the stock bottle of Grübler's neutral Canada balsam in xylol, from which the above in the balsam bottle had been taken, I found this was quite neutral. In other words, the neutral Canada balsam, kept in the balsam bottle and in the light of the room, and under four months' use, had by oxidation become decidedly acid, and was bleaching the preparations in a very short time, although the stock bottle, which had only been opened once and had been kept in a dark cupboard, was perfectly neutral. Can Canada balsam, dammar, or other balsam or cedar oil, or any medium of that nature be obtained neutral which will not oxidise and become acid? I wrote to Merck and asked if they would prepare me a neutral Canada balsam. They very kindly sent me a balsam, but with the following statement: "I have heard from my works that it is not feasible to supply a Canada balsam neutral in the strict sense of the word, because Canada balsam contains many resinous acids."

I think it may, therefore, be stated that practically all substances of the nature of balsams, oleo-resins, or cedar oil will sooner or later oxidise and become acid, and therefore are liable to cause fading of aniline stains.

Many workers have found the fading so constant that they do not mount at all, but examine their preparation without a cover-glass with immersion cedar oil, which is wiped off with benzol after use. Professor Paul Mayer of Naples suggested this to me lately. This answers fairly well, but many specimens of cedar oil and benzol are not neutral, and some fading will be found in the area with which the oil was in contact. It has the further disadvantage that the preparations soon become dirty and dusty, and in cleaning the oil off the preparation is apt to be scratched.

On talking over my difficulty with a distinguished chemist he suggested paraffinum liquidum, or parolein, as being a pure form of the former, should be tried, as it was absolutely neutral and remains so. I immediately tried this, using Burroughs and Wellcome's parolein, and found the results admirable, and I venture to think that preparations may safely be mounted in this medium with confidence that they will not fade, although it is early days to speak positively. It is, I should say, more trouble to mount in than a balsam, and the preparations require to be ringed or cemented round with some cement which is also neutral. After numerous experiments the following is the method I have adopted.

A small drop of parolein is placed on a perfectly clean cover-glass, which has been held over the flame of a spirit lamp to drive off any moisture on the glass, and this is applied to the air-dried film, which is also held for a second considerably above the flame, just long enough to make the moisture fade off. If the amount of oil is just sufficient to reach the margin of the cover-glass so much the better. If there be too much oil the preparation is placed under a piece of blotting paper, and the excess of oil removed as much as possible. The margin of the cover-glass is then ringed round with Apathy's gum syrup made as follows: picked gum arabic, cane sugar, ordinary, not candied, distilled water, of each 50 grammes. Dissolve over a water bath and add 0·05 gramme thymol. I test the reaction with litmus paper, and if acid I add a little sodii carbonas. If the cover-glass is round the cement can easily be applied on a turn table; if square, which I prefer, one paints it round with a very small brush

[1] Laveran et Mesnil: Trypanosomes et Trypanosomiases, 1904, p. 11.
[2] M. Heidenhain: Zeitschrift für die Wissenschaftliche Mikroskopie, 1909.
[3] G. Mann: Physiological Histology, 1902.

The gum syrup sets quickly in a warm room in about 15–30 minutes. When dry I apply over it a coat of Bell's cement, which also dries quickly (the latter is not acted upon by the immersion oil), and I feel I have a preparation that will keep.

The question may be asked, Granted that the preparation is permanent (time alone will show), admitted that the mounting is a little more trouble, is parolein as good a medium optically as cedar oil or balsam? My answer is, Yes, it is decidedly superior to it for the following reasons. Bolles Lee [4] states:—

> The visibility of minute colourless structures is proportional to the difference between the refractive index of the object and of the medium in which it is mounted. The majority of the elements of soft tissue are (after fixation) of an index of refraction somewhat superior to that of Canada balsam. It follows that by lowering the index of the balsam increased visibility is obtained, and the desideratum in any case is to find a medium just low enough to give good visibility, and yet not so low as to injure the performance of homogeneous objectives.

The refractive index of bacteria is said, according to A. Fischer, to be 1·55; that of solid balsam, 1·538; that of balsam in xylol a little lower, say 1·530; distilled water, 1·336; paraffium liquidum or parolein, 1·471. If a film of bacteria be made, dried, and mounted unstained in a medium having a refractive index of 1·55, say oil of anise seed, the bacteria would be quite invisible; in Canada balsam they would be seen, in parolein they would be seen much better, whilst in water they would be even better seen. The index of visibility or power of seeing an unstained, and presumably a stained, structure is greater when the medium has a very low or a very high refractive index.

I have recently devoted some 18 months of my leisure to the training of my eye, manipulation of the microscope, &c., for high-power microscopy, a subject apparently much neglected by medical microscopists, and took as my test the flagella of those bacteria and spirochætæ which were known to have this structure, as well as the flagella of tubercle bacillus and micrococcus melitensis, which are supposed by the learned members of our profession not to possess such structures. These preparations were stained with the ordinary methods, not with flagella stains, and I found that the visibility of such delicate structures depended largely on the medium in which they were mounted. They were most easily seen in media of very high or very low refractive index, but these media caused very rapid fading. Of all the practical media parolein was the best.

I sent some films of sputum containing tubercle bacilli, stained in the ordinary way and mounted in parolein, to my friend Mr. E. M. Nelson, without doubt the greatest authority on the microscope in the world, and he reported that neither he nor Mr. Merlin, another very great microscopist, had ever seen their equal. In answer to the question as to whether the low refraction index of parolein would interfere with the performance of an oil immersion objective which is corrected for Canada balsam or cedar oil he wrote:—

> We both think this the most beautiful slide we have ever seen. You need not trouble yourself about that. It is abundantly evident that the images are strong and sharp, in fact, stronger and sharper than in balsam. For the most critical image the alteration of the tube length for the lower index was very trifling from the usual position. About 1/10 inch longer, probably 1·5 mm., would be the requisite amount for your tube. The reason that there is little difference is that the objective has practically done its work before it has got to the lower refraction index medium, the organisms being on the cover-glass. It would be quite another matter if the organisms were placed at the bottom of a deep cell and the low refractive index medium was on the top of them.

As a matter of fact, the organisms were not on the cover-glass but on the slide, but evidently the small amount of medium made no difference.

On the other hand, parolein cannot, in my opinion, be used in place of the ordinary immersion cedar oil, as Rowntree has suggested,[5] without considerably and very noticeably impairing the performance of an oil immersion objective. No doubt this alteration could be corrected by an alteration in the tube length of the microscope, but to what extent or in which direction I am not prepared at present to state. The correctness of my statement can easily be proved. Take a film containing spirochæta pallida, stained but not mounted. Examine a certain organism with 1/12 inch objective with cedar oil immersion. Remove the preparation, clean off the cedar oil, and use parolein instead, and it will be seen that in the latter case the spirochæte is only seen with difficulty and is very indistinct.

In conclusion, I would say that I am not prepared to state that there is no better mounting medium than parolein; I should only be too glad to hear of one that offers a reasonable chance of permanency and which has as good optical qualities. Till then I shall put up with the inconvenience of mounting, with the hope that my best slides will not disgrace me in a few years' time.

Bournemouth.

[4] Bolles Lee: The Microtomist's Vade-mecum, 1905.
[5] Journal of Bacteriology and Pathology, 1909.

EXTENSIVE BLISTERING OCCURRING IN AN INFANT; DIAGNOSIS OF SCURVY.

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LATE SURGEON TO THE ORIENT LINE.

ON the R.M.S. *Orsova* an infant from the third class (who had been born and reared in the East-End of London and fed chiefly on artificial food), 15 months of age, was brought to me shortly after entering the Red Sea, suffering from diarrhœa and vomiting. This subsided under treatment, but on the third day from the commencement of the attack I was called to see the patient, the stewardess remarking, "It has been left in the sun and burnt." I found a huge blister on the left side extending from the back of the neck to the whole of the surface under the chin, and from above downwards between imaginary lines round the neck respectively on a level with the angle of the jaw and with the clavicle. The case resembled one of scalding. I ordered the blister to be dressed with boric acid ointment and had the infant removed to the hospital. The next day two smaller blisters had arisen just below the lower lip, and on the third day large ones occurred on the chest. The patient's temperature varied between 100° and 104° F., and the respirations between 30 and 40 a minute. The infant showed marked signs of rickets—viz., among other things, large open anterior fontanelle, thickened epiphyses, and large abdomen.

On arrival at Colombo, Ceylon, the port health officer, on seeing the patient, remarked: "Has it been scalded?" Another medical man and a medical woman, both of high qualifications, saw the case, but were at a loss for a diagnosis.

After leaving Ceylon I had the patient removed to a first-class cabin and a stewardess detailed to attend, as the hospital was exposed to the sun and was now crowded. Fresh blisters had arisen on the abdomen and thighs. The infant now exhibited other signs—tenderness over the tibia and femur, and small subcutaneous hæmorrhages. I prescribed small doses of lime-juice, and after one day's treatment with the lime-juice there was great improvement in the local and general conditions, and by the time we reached Fremantle, Western Australia, the blisters had completely disappeared, the temperature was normal, the respirations were practically so, and the child showed signs of interest in the surroundings.

After leaving Fremantle the infant unfortunately developed broncho-pneumonia, and at Adelaide, the parents' port of destination, was sent by me to the Children's Hospital. On board ship the child was fed on sterilised milk and meat juice.

Diagnosis.—I concluded that this was a case of scurvy, modified by the tropical climate. Sunburn could be safely excluded, for blisters occurred on unexposed parts and also after the child was sheltered from the sun. The distribution and behaviour of the blisters were not in accordance with pemphigus. The action of the lime-juice seemed to be remarkable.

Bude, N. Cornwall.

ROYAL VISIT TO THE RADIUM INSTITUTE.—On March 23rd the King and Queen visited the Radium Institute, Langham-place, and were received by Sir Frederick Treves and Dr. Louis Wickham, director of the Paris Radium Institute, Lord Iveagh, and Sir Ernest Cassel. Their Majesties evinced great interest in all that the Institute had to show them, and conferred on Dr. Wickham, before leaving the building, the Fourth Class of the Royal Victorian Order.

SOME EXPERIMENTS ON THE INHIBITION OF TUMOUR GROWTH IN RATS AND MICE, WITH A SUGGESTION FOR AN EMPIRICAL TREATMENT IN MAN.[1]

BY HELEN G. GRÜNBAUM, M.D. BIRM.,

AND

ALBERT S. GRÜNBAUM, M.D. CANTAB.

(From the Pathological Department of the University of Leeds.)

IN the course of our work generally on new growths we have been led to try some experimental curative treatment which may be applicable also to the human subject, and therefore of more than academic interest to this society.

One result of Ehrlich's theory of immunity was the discovery of the cytolysins—that is, of substances capable of destroying alien cells. These cell-solvents may be produced by the injection of the cells of the organ of one species into animals of another species, whereupon the serum of the injected animal acquires cytolytic properties. The application of this observation to cancer has been tried by many observers—namely, the injection of an animal with cancer cells in the hope that its serum might acquire anti-carcinomatous properties. It was attempted some years ago by one of us, using mammary cancer and a cow respectively, but neither the milk nor the serum exhibited any definite carcinolytic effects.

On the assumption that some kind of protective substance might be formed in animals affected with epithelioma, the serum of a mare having an epithelioma of the vulva was injected into some cases of cancer, more especially one of uterine cancer. A violent reaction followed each injection (which was made locally) and the case was modified from an inoperable to an operable condition. Both operation and further treatment were refused, and when the patient returned later to the workhouse infirmary renewed treatment with the serum from another mare failed to reproduce the former effect.

Later experiments showed that in rats regression of inoculated growths may follow the injection of epitheliomatous horse serum and also of simple horse serum, and that this regression occurs in a greater proportion of treated than of untreated rats. (Table I.)

TABLE I.—*Rats treated with Horse Serum.*

Number of rats.	Size of tumour.	Treatment.	Result.
3	2 large, 1 small.	3 injections of 1 c.c.	1 increased; 2 regressed in three weeks.
2	Cherry.	3 injections of 1 c.c.	Both regressed.
1	Walnut.	2 injections of 1 c.c.	Slow regression.
1 (control).	,,	Not treated.	Grew to large size.
3	Pea.	4 injections of 0·3 c.c.	2 increased; 1 regressed in a week.
9	3 days after inoculation.	1 injection of 1 c.c.	5 grew tumours to size of cherry in 5 weeks; 3 remained negative.
2 (control).	—	—	Attained same size.

Another quite different series of experiments revealed the curious and interesting fact that it was not possible simultaneously to produce immunity against cobra venom and to retain susceptibility to new growth inoculation in mice and rats, nor, conversely, after successful inoculation with tumour, to produce immunity to cobra venom. If the tumour were already present, and continued to enlarge, the animal succumbed to a few ordinarily sub-lethal doses of cobra venom. On the other hand, in those animals in which immunity could be established, growths which had already reached a size of 1 cm. in diameter would regress. (Table II.)

[1] A paper read before the Leeds and West Riding Medico-Chirurgical Society on March 3rd, 1911.

TABLE II.—*Rats treated with Cobra Venom.*

Number of rats.	Size of tumour.	Treatment.	Result.
7	3 days after inoculation.	10 injections, $\frac{1}{100}$ to $\frac{1}{10}$ mgr., at intervals of 5-7 days.	1 only developed a tumour and it died after the sixth injection, when the tumour exceeded 2 cm. × 2 cm.
6 (control).	—	Not treated.	2, large growths; 3, medium; 1, negative.
4	Large.	7 injections, $\frac{1}{10}$ to $\frac{1}{10}$ mgr.	1 died after first injection; 1 died after 4th injection; 2, after five injections, had no tumours left and remained refractory to re-inoculation.
6	5 days after inoculation.	5 injections, $\frac{1}{100}$ to $\frac{1}{10}$ mgr.	2 died after fourth injection; 2 died after fifth injection.
19	13, over 1 cm.; 6 negative.	8 injections, $\frac{1}{100}$ to $\frac{1}{10}$ mgr.	Animal with largest tumour died three hours after fifth injection. Tumour 28 grm.; animal 47 grm. Lethal dose should have been $\frac{1}{10}$ mgr., but $\frac{1}{10}$ mgr. was fatal. After seventh injection only 2 remained positive and they were lost sight of during our absence.

The inference we drew from this series of experiments was that if the treatment caused the regression, such regression must be due to some antibody or antibodies formed as the result of this active immunisation. If this were so, passive immunisation with antivenom serum should produce similar effects. Therefore a series of animals with well-grown tumours was treated with antivenom serum (B. W. & Co.). (Table III.)

TABLE III.—*Rats Treated with Antivenom Serum.*

Number of rats.	Size of tumour.	Treatment.	Result.
	Cm.		
1	1·6 × 1·1	3 injections of 1 c.c.	After third injection reduced to 1·4 × 0·5 cm.; disappeared in four weeks.
1	1·1 × 0·5	2 injections of 0·5 c.c. 2 injections of 1 c.c.	Regressed in three weeks to 0·1 × 0·3.
2 (control).	1·7 × 0·4 1·2 × 1·2	—	After three weeks 2 × 1·2. After three weeks 1·7 × 0·7.
1	1·8 × 1·7	3 injections of 1 c.c.	Grew to more than 3·2 × 2·4.
3	1·3 × 0·8		Disappeared in six weeks.
	0·3 × 0·3 1·1 × 0·7	3 injections of 1 c.c.	Disappeared in three weeks.
4	2·6 × 0·3 1·4 × 0·7 1·4 × 0·5	3 injections.	Disappeared.
	2·2 × 1·0	—	Died two weeks later 4·5 × 3·7.
7	1·8 × 1 1·6 × 0·9	4 injections of 3 c.c.	Disappeared in five weeks.
	1·6 × 0·7 1·4 × 0·8 1·6 × 0·7	6 injections of 3 c.c. 7 injections of 3 c.c.	Disappeared in eight weeks. Grew to 2·6 × 1·7, then decreased; died when 2 × 1·2.
	2 × 1 2·2 × 1·3	7 injections of 3 c.c.	Increased to 4 × 3. Increased to 3·1 × 1·4.
4 (control).	1·4 × 0·7 1·3 × 0·8	Not treated.	In two months size of bantam's egg and of large hazel-nut respectively.
	1·2 × 1·2 0·7 × 0·7	Treated in other ways.	Grew to 4 × 3·2 and size of hen's egg respectively.
2 I.	Inoculated after fourth injection of C.V.	1 injection A.V. serum; then 5 injections C.V. $\frac{1}{10}$ mgr.	Remained negative to inoculation with "Ehrlich" sarcoma.
2 I.	Inoculated with Jensen sarcoma.		
	3·3 × 2·2 2·2 × 0·9	1 c.c. A.V. serum on alternate days for four weeks.	Larger one grew to more than 5·7 × 5·3. Smaller one disappeared.
3 (control).	2·2 × 0·8 1·9 × 0·7 2 × 1·1	Other treatment for one month.	2·1 × 0·8 2 × 0·9 2·5 × 1·4

It will be noted that regression has taken place only when the growths have not exceeded about 1·5 cm. in diameter,

the size at which it is still possible to influence the growth depending probably on the ratio of tumour-weight to body-weight, but a sufficient number of animals and tumours has not yet been weighed to allow of any definite statement.

We think that the results of these experiments warrant the extension of the treatment to human beings, and at the same time show that quite inoperable cases are not fair subjects for such trial, for it seems not unlikely that a similar limitation to that seen in rats will exist in the case of man. Since our experiments suggest that a growth can be influenced only if its weight be under a certain proportion of the body-weight, it follows that the subjects suitable for its application will chiefly be those in which the main mass of growth can be removed by operation, and it is the coöperation of the surgeons that we are now seeking. Any danger of dissemination of growth by operative procedure in advanced cases can, we find, be obviated in rats by a large dose of anti-venom serum at the time of operation.

Three human patients have already received treatment by combined passive and active immunisation, but since the mass of tumour was large in each case and was not excised, they were not fair cases for the purpose, although they showed that the treatment in itself was harmless. It is not possible to state whether any lasting effect was produced on the growths, since the patients left the hospital too soon for the formation of a definite opinion.

Leeds.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

MEDICAL SECTION.

A MEETING of this section was held on Tuesday, March 28th, Sir WILLIAM ALLCHIN in the chair, at which Dr. THOMAS LEWIS opened by an interesting paper a valuable discussion on Electrocardiographic Methods. We regret to be compelled to hold over an account of the meeting until next week.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Exhibition of Cases.—History of Infant Feeding.—Prevention of Measles.

A MEETING of this section was held on March 24th, Dr. E. CAUTLEY, the President, being in the chair.

Dr. H. MORLEY FLETCHER showed: 1. Infantilism with Chronic Nephritis and Polyuria in a boy, aged 6 years, who had not grown since he was 2 years old. His height was 2 ft. 7 in. and his weight 21 lb.; intelligence very good; teeth carious. The abdomen was somewhat distended, and the kidneys were palpable; testes undescended. Genu valgum had developed at 5 years. He had always passed a large amount of urine, 40 to 70 oz. per diem; sp. gr. 1005, reaction neutral, 0·16 per cent. albumin, granular casts occasionally present, no glucose, pentose, acetone, or diacetic acid, but much indican present. Cammidge reaction negative. Blood pressure 75 mm. Hg. Cryoscopic examination −0·4 C. Wassermann's test negative. The patient had always drunk large quantities of fluid (at four months as much as four pints per diem). The administration of thyroid had had no effect. 2. Infantilism with Thyroid Inadequacy (juvenile myxœdema) in a girl, aged 8 years. Height 2 ft. 9 in; weight 24½ lb. Walking and talking occurred at the usual age. The skin was dry and rough, and the face pale, puffy, and old-looking. The hair was abundant, but the scalp was scurfy. The mental processes were slow. Three months' thyroid treatment had caused considerable improvement, but no growth.

Dr. J. D. ROLLESTON showed a case of Inherited Syphilis and Blue Sclerotics in a male infant, aged 9 months, who, when three months old, had a transient loss of power in the left arm. At the age of 5 months the child had diphtheria, and syphilitic periostitis of the left ulna supervened. Two months later a fracture of the left humerus occurred. Other signs of inherited syphilis had also been present, but had cleared up under treatment with mercury. The child presented a uniform blue colouration of both sclerotics—a characteristic which was present in the mother and in the grandmother and an aunt on the maternal side.

Dr. F. E. BATTEN showed: 1. Simple Atrophic Type of Myopathy in a boy, aged 6 years, who had never been able to walk, though standing was possible. The patient showed marked hypotonia, and could be "folded up" so that the trunk lay parallel to the legs. The feet and hands could be dorso-flexed to an unusual angle. Reflexes: knee-jerks present, plantar flexor. Sensation was perfect. Electrical examination showed a marked diminution to faradic stimulation, but no polar change. There was general wasting without localised atrophy or hypertrophy, and almost all movements could be performed so long as no strength was required. 2. Progressive Spinal Muscular Atrophy of Infants (Werding-Hoffmann) in a girl, aged 1¾ years, a seven months child. Until the age of seven months she was said to have been normal, but since then she had become gradually weaker and more helpless so that she could not lift her head off the pillow. The child was of a "Mongoloid" appearance, but intelligent. The neck and trunk muscles were powerless, but slight movements of the arms and hands could be made. In the lower extremities there was a little power of flexion and extension in the ankles and toes. The loss of tone in the muscles was considerable, but hypotonia was not present. All reflexes were absent. The muscles of the face, eyes, and diaphragm alone remained normal. Electrical reactions showed loss of response to faradism in all the paralysed muscles. Sensation was unimpaired.

Mr. P. MAYNARD HEATH showed: 1. Syphilitic Osteitis of the Femur in a boy aged 7 years. Twenty-two months ago he was struck on the left thigh by a large stone, but it was not until three months ago that the thigh began to swell. A skiagram showed diffuse osteitis of the whole shaft and neck of the femur. There was a history of syphilis in the father, but the boy showed no other signs of inherited disease. 2. Deformity of the Cervical Spine in a girl aged 2½ years. In the region of the sixth and seventh cervical spinous processes was a bony prominence about 1 in. long and ½ in. broad, extending downwards and outwards in the deep fibres of the trapezius towards the upper angle of the scapula. The outer end was apparently not connected with the scapula, which was not deformed nor elevated above its normal position. 3. Multiple Exostoses in a boy aged 5 years.

Dr. F. LANGMEAD showed: 1. Achondroplasia in a girl aged 10 months. 2. Myopathy (? affection of the facial muscles) in a boy. The lower extremities showed definite pseudo-hypertrophy, but other muscles, such as the pectorales, trapezii, and latissimi dorsi, were atrophied. A point of interest was whether the facial muscles were affected. The usual facial movements could be performed, but the boy had a fixed expression and "never smiled."

Dr. O. K. WILLIAMSON showed Secondary Optic Atrophy due to a (?) Cerebellar Tumour in a boy, aged 7 years. The symptoms commenced seven months previously with headache, giddiness, and wasting; during the past month loss of sight had also occurred. There had been no vomiting or fits. There was a history that some years ago the boy had had tuberculous glands in the neck. The discs were very pale, and showed post-neuritic atrophy. There were no paralyses, and the knee-jerks were present. During the past few days the boy had tended to fall to the right when walking.—The cases were discussed by the PRESIDENT, Mr. S. STEPHENSON, Dr. F. PARKES WEBER, Dr. F. W. HIGGS, Dr. L. G. GUTHRIE, Mr. T. H. KELLOCK, Mr. T. P. BEDDOES, and Dr. W. EWART.

Dr. D. FORSYTH read a paper on the History of Infant Feeding from Elizabethan Times. Tracing the changes in breast-feeding through nearly 400 years, Dr. Forsyth showed how in each century the period of suckling had steadily declined. Beginning in the fifteenth century at two or three years—a duration which is still customary among, for example, the Japanese and the Greenlanders—it had become 18 months to two years under the Stuarts, one year in the Georgian days, and now lasted only about eight months. Step by step the mother had been supplanted, first by the wet-nurse and later by the sucking-bottle. The rise and fall of the wet-nurse, who reached her palmiest days in the eighteenth century, were described, together with the social evils that

she brought with her. Artificial feeding was quite unknown until the time of the Hanoverian succession, and even then the choice of food was limited to bread-and-water pap. A little later cow's milk came into use, and Dr. Forsyth showed how the profound suspicion of all artificial methods was to be accounted for by the sanitary condition of the people in Tudor and Stuart times. Cow's milk, however, for more than a century after its introduction was held in general disrepute, for the reason, no doubt, that a widespread prejudice against boiled milk existed among all classes. In the nineteenth century three notable developments were witnessed—first, the invention of the sucking-bottle; secondly, the manufacture of proprietary foods; and thirdly, the final acceptance, after long struggles, of artificial methods. The original feeding-bottle was a cow's horn, to the tapering end of which were tied a couple of pieces of leather, sewn together like the finger of a glove, and the babe sucked its milk between the stitches. The gradual stages by which this horn developed into the modern hygienic feeding-bottle were traced. Finally, the more recent developments in the methods of feeding during the last 50 years were described. In conclusion, Dr. Forsyth, recalling the striking decline in the duration of breast-feeding and the steady progress of artificial methods, glanced at the future of infant feeding. Did it lie with the method of nature or with the methods devised by man's ingenuity? His experience had been that medical men, more often than was sometimes thought, supported the bottle against the breast, and he thought that in doing this they were showing no more than a practical appreciation of the modern trend of infant feeding. —Dr. W. BEZLY THORNE made some remarks on the drugging of infants by nurses.

Dr. R. MILNE read notes on a plea for the Home Treatment and Prevention of Measles, in which the use of carbolised oil for the throat and the inunction of the body with eucalyptus were advocated.[1]—The discussion was adjourned until May 28th.

LIVERPOOL MEDICAL INSTITUTION.

Exhibition of Cases and Specimens.—The Pathogenesis and Treatment of Rheumatic Fever and Chorea.

A MEETING of this institution was held on March 23rd, Dr. T. R. BRADSHAW, the President, being in the chair.

Mr. G. P. NEWBOLT showed: (1) A woman, aged 52 years, after Excision of the Upper Jaw for Epithelioma with Obturator fitted; (2) a man, aged 55 years, from whose nose Polypoid Growths becoming malignant had been removed by turning the organ over to the right and clearing out the ethmoidal and frontal sinuses; (3) a case of Specific Disease involving the Petrous Portion of the Temporal Bone, the common carotid having been tied for repeated hæmorrhages; and (4) a man whose hand had been extensively maimed, and who in spite of the deformity was working as a labourer.

Mr. ARTHUR J. EVANS showed a case of Syphilitic Macrocheilia of 19 years' standing which had rapidly improved under salvarsan treatment injected intramuscularly; also several cases of Chronic Subcutaneous Gummata which had healed rapidly under the same treatment administered intravenously. All these cases had been under mercury and iodides for varying periods without any marked improvement.

Dr. LESLIE ROBERTS showed a series of Tuberculous and Syphilitic cases.

Mr. THOMAS GUTHRIE showed two cases of Chronic Suppurative Disease of the Frontal and Ethmoidal Sinuses treated by Killian's radical operation.

Dr. G. G. STOPFORD TAYLOR and Dr. R. W. MACKENNA showed a case of Darier's Disease in a man, aged 33 years, who had suffered for 2½ years from a general hypertrophy of the sebaceous system, the areas especially affected being the scalp, neck, shoulders, and chest. The pilosebaceous orifices were plugged with spines. There was extensive pruritus, and on the shoulder were several pigmented patches. The diagnosis had been confirmed by microscopical examination. They also showed a case of Quinquaud's Folliculitis Decalvans; a case of Prurigo Ferox; a woman with a Rodent Ulcer on the Nose and a large inoperable Scirrhus of the Breast; several cases of Lupus Erythematosus; and a number of Photographs showing the effects of salvarsan.

Dr. R. J. M. BUCHANAN read a paper on the Pathogenesis and Treatment of Rheumatic Fever and Chorea. He considered in some detail the researches on the bacteriology of these diseases, and concluded that the organism described by Poynton and Paine was the cause. He concluded that rheumatism was really a lingering process with exacerbations resulting from the presence of the infective agent, and hence that the essential object in treatment should be to increase the resistance of the patient. For this reason he had used a vaccine treatment. The vaccine was made from a streptococcus which he had obtained from the blood of a patient suffering from rheumatic endocarditis. He had examined in detail the staining and cultural reactions of this organism. Some 20 cases had been treated in this way, and Dr. Buchanan described the clinical features in a number of these cases. He advocated the vaccine treatment in early cases, and considered that it might have a favourable action even on endocarditis. In more chronic cases it was useful for the joint affections. He had obtained good effects from it in chorea. He thought that the vaccine might prevent relapses.—The PRESIDENT remarked that the bacteriology of rheumatic fever was very uncertain, and he did not consider that the causal nature of the organism of Poynton and Paine had yet been proved. He considered that much of the improvement seen in Dr. Buchanan's cases might be due to the rest and general hygiene of the hospital. He had extensively used the salicylates and had not encountered any bad results, with the exception of deafness; this he found ceased if the acid was substituted for the sodium salt.—Dr. N. PERCY MARSH emphasised the importance of treating seriously rheumatism of the muscles and fasciæ in children, since the manifestations of joint rheumatism were often slight. The neglect of doing so in the case of growing pains was the cause of many hearts being permanently crippled. He had treated 10 cases with the streptococcus rheumaticus vaccine; of these nine had improved considerably under the treatment, but in three relapses had occurred within a few weeks of the patient leaving the hospital. One case of chorea had shown no improvement and had, in fact, developed endocarditis whilst under treatment. The usual dose given was 10 millions.—Dr. J. MURRAY BLIGH stated that he had found the von Pirquet tuberculin reaction to be invariably positive in many cases of chorea, when he had been working on the value of this reaction. He had, in fact, never seen a case of chorea in which the tuberculin reaction was not positive. He recalled the statement of Dr. R W. Philip, that chorea was not uncommonly associated with tuberculosis.—Dr. J. HILL ABRAM doubted the correctness of the premisses in Dr. Buchanan's work.—Dr. E. T. DAVIES alluded to the cases of so-called imitation chorea.—Dr. C. J. MACALISTER held that there was little doubt as to the infective character of chorea, and related several instances where the disease had apparently been directly conveyed from one child to another. Regarding the relation of chorea to acute rheumatism, he felt that there was some doubt, and referred to a paper previously published, in which he pointed out that the toxicity of the blood plasma in chorea was great to white blood cells taken from healthy children, whereas the blood cells of children suffering from chorea, and having attained some immunity, were less influenced by it, and he thought that if the diseases were due to identical poisons the cells of rheumatic patients ought to be as immune as those taken from people suffering from chorea. He regarded the salicylates as specific for acute rheumatism. He referred to a paper which he had published in 1902, in which he had stated that he regarded sodium salicylate as almost a chemical test for acute rheumatism, and that the cases that did not respond to it should really be classed as rheumatoid fevers. Dr. Macalister also referred to the eosinophilia that was so constantly present in chorea but was never present in rheumatic fever, an effect that marked another distinction between the two diseases. He also directed attention to his experience that this blood condition remained for some considerable time after the disease was apparently better, and that relapses were very apt to occur so long as it existed. Consequently he made a practice of keeping his patients in hospital until the blood became normal.

[1] We shall publish this paper in THE LANCET shortly.—ED. L.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF ANATOMY AND PHYSIOLOGY.

Acromegalic Skeleton.—Femur with Separate Ossific Centre for Third Trochanter.—Displacements caused by Pleural Effusion.—Topographical Anatomy of the Salivary Glands.

A MEETING of this section was held on Jan. 27th, Professor E. P. MCLOUGHLIN, the President, being in the chair.

Professor A. C. GEDDES demonstrated the Skeleton of an Acromegalic Subject. He showed a series of lantern slides illustrating the change in facies during the 25 years of life for which the disease persisted. The record of the dissection of the body was also illustrated by lantern slides. The points to which attention was specially directed were: 1. The great length of the facial skeleton. This was shown to be due to the great increase in height of the maxillæ. This increase especially affected the alveolar processes of the bones. 2. The mandible was a remarkable bone, the greatest change being the increased length of the body, which was set at an open angle with the ascending ramus. The vertical height of the symphysis was much increased. 3. The skull vault was in parts enormously thickened, in parts extremely thin. 4. The pituitary fossa was enormous. 5. The vertebral column was completely ankylosed except in the case of the joint between the third and fourth cervical vertebræ. 6. The ribs were very large, more particularly at their anterior ends. 7. The pelvis was enormously broad, and the subpubic angle very great. 8. In the limbs the bones showed an extraordinary prominence of the muscular crests with an equally extraordinary degree of atrophy of the general thicknesses of the shafts. 9. The bones of the hands and feet were not unduly large, but there was a considerable coalescence of the carpal and metacarpal and of the tarsal and metatarsal bones. 10. The joints throughout the body showed the changes associated with the so-called disease, rheumatoid arthritis.—Professor GEDDES showed also a Human Femur showing a Distinct Centre of Ossification for the Third Trochanter, and made a communication on the Mechanical Effects of Right-sided Pleural Effusions as they appeared in the body of a male subject hardened with formalin.—Professor A. F. DIXON referred to the diversity of opinions expressed in the literature on the subject of a separate ossific centre for the third trochanter of the femur. He was inclined to think that such a centre usually existed. In regard to the case of acromegaly, he pointed out that apparently those bones of the head that were developed in membrane were chiefly affected, the internal pterygoid plate, for instance, being greatly lengthened, while the external was of normal dimensions.

Professor J. SYMINGTON described the Shape and Relations of the Salivary Glands illustrated by specimens and drawings. His description was based upon the results of the examination of a series of coronal sections of a head made about half an inch apart. The position and relations of any salivary glands exposed by these sections were drawn. The pieces of each gland were then removed from the slabs and placed in their natural relation to one another so as to demonstrate the shape of the whole gland, while the structures bounding the cavities from which these pieces had been removed were defined. A drawing was then constructed showing the position of the glands, &c., viewed from the lateral aspect. The shape of the parotid gland was considered, and also its deep relations, more especially to the facial nerve and external carotid artery. Attention was drawn to the slight extent to which the submandibular gland reaches forwards on the cervical aspect of the mylohyoid, and the way in which it extends down the neck over the posterior belly of the digastric into the carotid triangle.—Professor GEDDES spoke, and Professor SYMINGTON replied.

CHELSEA CLINICAL SOCIETY.—A meeting of this society was held on March 14th, Dr. T. W. Parkinson, the President, being in the chair.—Dr. W. Hale White, in the debate on the Treatment of Colitis, said the first point to decide was whether the attack was primary or secondary. Colitis might be due to injury or inflammation in a neighbouring part, to septic disease or fever, or to Bright's disease. There was, too, a variety due to the absorption of pneumococci, and it might be the result of malignant disease or of appendicitis. In this form it was especially important to know whether the appendicitis followed or preceded the colitis. In the former case not only was appendicectomy useless, but it rendered appendicostomy, the really appropriate treatment, impossible. In primary colitis the important thing was to keep the bowel empty. Whether to inoculate as well was a debateable point. If this treatment was followed it should be from a culture of the dominant microbe, which was not always easy to find, and the patient often got well while it was being discovered. Muco-membranous colitis was almost always the result of constipation. Here, again, the treatment was keeping the bowel empty, and this was best effected by a light peptonised diet and castor-oil. The principle of the Plombières treatment was just the same, and was usually very effectual, though perhaps in a neurotic patient it was liable to keep the subject rather too prominently before the mind. Regular abdominal massage by a properly trained nurse often did good, but electricity Dr. White found useless. When enteroptosis was present support should be given by suitable stays. Diet did not seem to matter. There were two opposite forms of treatment, both apparently successful. One consisted in a bulky diet, the other in one which left practically no residue. Opium should never be given. For the more severe cases appendicostomy gave the best results, but in membranous colitis it was well to avoid it if possible on account of the nervous element in this form of the disease. Ulcerative colitis was due to various organisms, B. coli, streptococci, and pneumococci. A diet of milk and eggs was most suitable in these cases, and opium might sometimes be needed to relieve the pain. Intestinal antiseptics were sometimes useful, but not always, and there was very often a relapse after vaccine treatment in two or three months. In this case appendicostomy should be performed, and in severe cases earlier. It should not be forgotten, too, that in these relapsing cases the micro-organisms might have got into the blood, and that the condition might have become general instead of being merely local.—Dr. R. Hutchison spoke on the primary forms of colitis. Between the different forms there was no hard-and-fast line; one often passed into another, or they might coexist. In muco-membranous colitis with neurasthenia it was difficult to decide which was cause and which was effect, and both conditions must be treated. With regard to diet Dr. Hutchison favoured the French system of avoiding all residue as far as possible, and especially the exclusion of cellulose, which was never digested by these patients. Peptonised milk, as an exclusive diet, was very serviceable, but sour milk was generally a failure. Aperients were useful in all cases, but they should be chemical as distinct from mechanical aperients. The most suitable were castor-oil or senna. Astringents generally should be avoided, but they were sometimes indicated in chronic catarrhal cases, combined with antiseptics in the form of salicylate of bismuth or sulpho-carbolate of zinc. Opium, of course, should be avoided except in severe cases of pain and tenesmus. For the pain due to spasm in muco-membranous colitis belladonna was most useful. Treatment by intestinal antiseptics Dr. Hutchison did not consider sound either in theory or practice. Of injections, he had found the best to be warm olive oil and a normal saline. Some of the silver salts were occasionally helpful if the disease was sufficiently localised. Operation, from the physician's point of view, might be directed either to diverting the passage of the bowel contents by throwing the colon out of gear, to facilitating the cleansing of the bowel, or to the removal of sources of infection, as in appendicectomy. Colostomy should be reserved for the gravest type of cases, but in some it might be the only means of saving life. Appendicostomy was very successful, but relapses often occurred. It was most useful in ulcerative cases but not often advisable in muco-membranous cases. Appendicectomy often did no good. As to specific remedies, ipecacuanha had often a very striking effect in ulcerative colitis, stopping the hæmorrhage and healing the ulcer. Dr. Hutchison was rather sceptical as to the value of any form of vaccine treatment owing to the difficulty of isolating the organism which was the actual cause of the symptoms.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 17th, Dr. A. Christy Wilson, the President, being in the chair.—Mr. J. F. Dobson read a paper on Some Cases of Nephrectomy with Special Reference to Infection of the Kidney during

Pregnancy and the Puerperium. The symptoms and diagnosis of the various forms of pyelitis occurring during pregnancy were described. It was thought that the majority of cases recovered under treatment, but that in some cases the disease became chronic. The value of vaccines and lavage of the pelvis of the kidney was discussed. In one case a moveable and slightly hydronephrotic kidney became infected during pregnancy. In another case infection of the kidney during the fifth month of pregnancy gave rise to the formation of multiple abscesses in the cortex. Nephrectomy was performed without interruption to the pregnancy. Another case was described in which symptoms of renal calculus occurred during pregnancy, and as a result of puerperal sepsis the kidney became infected and a pyonephrosis developed. Nephrectomy was performed successfully, but the patient was extremely anæmic for some weeks after the operation. On cutting into the specimen it was found that the suprarenal capsule had been removed with the kidney, to which it was firmly adherent. Cases were described where pyelitis, similar in every respect to the disease observed during pregnancy, occurred in non-pregnant women.—Dr. C. Oldfield said that he had met with seven or eight cases of the severe forms of acute pyelo-nephritis of pregnancy during the last four years. With regard to treatment, he had never found it necessary to operate or even to terminate the pregnancy. If medical treatment failed, rupture of membranes was simple, safe, and efficacious, and lavage through ureteral catheters should be reserved for exceptional cases where the former proceeding was not successful. Nephrotomy and nephrectomy had occasionally been done by surgeons, but obstetricians did not find such severe measures necessary. The chief danger appeared to arise from operations, especially when the condition was wrongly diagnosed as appendicitis.—Dr. J. Stewart showed a specimen of Femoral and Popliteal Arteries from a case of Senile Gangrene in a man, aged 79 years, the subject of diabetes. Three months after the commencement of gangrene in the big toe amputation was performed through the junction of the middle and lower thirds of the femur, the gangrene then having spread to the dorsum and sole of the foot. There was no ligature required at any stage of the operation; although sloughing was dreaded, healing took place by first intention. The femoral artery was represented by a fibrous cord and was impervious; all the branches below were patent.—Mr. Alexander Sharp showed: 1. A case of a Persistent Thyroglossal Duct in a child aged 2½ years. The condition shows a tiny opening in the middle line of the neck between the hyoid bone and the thyroid cartilage. It was first noticed by the mother when the child was 6 months old. The opening admits a probe of the calibre of a Eustachian bougie for about one-third of an inch. The fluid which exudes from time to time in very small quantity is almost colourless. 2. A case of Fibroma of the Left Vocal Cord in a woman, aged 34 years, who complained of severe intermittent pain in the larynx and intermittent loss of voice. The symptoms were of two years' duration. During an intervening pregnancy she had complete loss of voice. On the left cord nearer its anterior end was a small, white, sessile, split-pea-sized fibroma arising from its margin and under surface.—Mr. A. Gough showed a child, aged 6 months, recovering from Basal Meningitis after treatment with autogenous vaccine. The child is now very well but shows slight hydrocephalus.—Mr. A. L. Whitehead showed a skiagram of Steel in the Vitreous. A fold of conjunctiva was reflected on the outer side, and the piece of steel was removed by Haab's magnet through an incision in the sclerotic behind the ciliary processes and between the external and inferior recti.—Cases and specimens were also shown by Mr. H. Collinson, Mr. H. Littlewood, Dr. E. F. Trevelyan, Mr. B. G. A. Moynihan, Mr. W. Thompson, Dr. A. S. Grünbaum, and Dr. T. Churton.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on March 17th, Dr. J. B. Hellier, the President, being in the chair.—The President showed a Fœtus with Webbed Extremities and Complete Absence of the Kidneys, Ureters, and Bladder. It had apparently developed otherwise normally to about the eighth month of fœtal life.—Dr. D. Lloyd Roberts (Manchester) showed a specimen of Cystic Tumour of the Breast which he had removed. The origin of these tumours was discussed.—Mr. A. W. Cuff (Sheffield) showed specimens of Fibro-myomata; also a Hair-pin removed from the Bladder by Vaginal Cystotomy.—Dr. J. E. Gemmell (Liverpool) showed a specimen of Teratoma of the Ovary with drawings, X ray photograph, and microscopic sections. The specimen consisted of the ovary, tube, and part of a cyst containing broad ligament on the right side; the ovary, definitely separate from every other structure, in external appearance simulated a small fœtus with head, back, and limbs; on dissection the portion resembling the head was an oval, egg-shaped body, calcified all over, and at its broader end showed indications of occipital and parietal sutures. This closed cavity, when opened, contained a yellowish material of the consistency of gruel, which on chemical examination proved to contain cholesterol and a substance resembling "protagon" or some similar brain lipoid, which contained sugar and was considered to be of nervous origin and nature. Other portions of the ovary contained thyroid gland tissue of an adenomatous type, and calcareous nodules and masses but without any definite arrangement resembling fœtal limbs. The specimen was considered to be a compound ovarian teratoma, with an attempt at the formation of a skull cavity with brain in that cavity and with thyroid formation and deposits of lime.—Dr. W. K. Walls (Manchester) reported two cases of Ectopic Gestation accompanied by Inflammation of the Tube of the Opposite Side. In both cases it was necessary to perform double salpingo-oöphorectomy.—Mr. Miles H. Phillips (Sheffield) reported a case of Chorio-epithelioma of the Fallopian Tube. In September, 1908, the patient, a III.-para aged 28 years, had the left tube removed for what appeared to be a tubal gestation. Its inner end was enlarged to form a cylindrical mass measuring $3\frac{1}{2} \times 1\frac{1}{2} \times 1\frac{1}{2}$ in. On section it appeared to consist of organising blood clots; there was no trace of an ovum. Microscopical examination of peripheral portions of the tumour showed typical chorio-epitheliomatous tissue deeply invading the wall of the tube. The uterus was then explored with a negative results. Six weeks later a recurrent mass could be felt in the left broad ligament, and an ovoid swelling of purplish colour had appeared in the anterior vaginal wall. The patient had become much thinner and paler. Total hysterectomy, with removal of the apparently healthy right appendages and left ovary, was performed in November, 1908. At the same time a nodule ($1 \times 1 \times \frac{3}{4}$ in.) was excised from the upper wall of the bladder and another ($1 \times 1 \times \frac{1}{2}$ in.) from the anterior vaginal wall. No attempt was made to remove a nodular mass situated at the root of the mesentery. The recurrent growth and the two metastatic nodules consisted largely of blood clot, but all showed typical chorio-epithelioma. The patient made a rapid recovery from the operation and steadily gained weight and strength. At one time there was a cough with blood-stained sputum, but no physical signs of growth in the lungs were detected. Ten months later the mesenteric swelling had quite disappeared, and in March, 1911, two years and four months after the radical operation, there were no signs of recurrence in the pelvis or elsewhere.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 16th, Mr. A. W. Cuff, the President, being in the chair.—Dr. W. Brander, in a paper on the Clinical Value of the Pulse-Pressure Range, defined pulse pressure as the difference between the systolic and diastolic pressure, and showed from recent experiments that it gave an idea of the physiological and pathological relationship existing between the force and output of the left ventricle and the peripheral resistance. Amongst others, Dawson and Gorham found that in dogs the pulse pressure varied exactly with the systolic output, not only under normal conditions but during various procedures. Dr. Brander had made many determinations with Erlanger's sphygmomanometer in health and disease, which included a series of estimations showing the effect of measured exercise on 100 patients with cardiac affections. He drew the following conclusions: 1. It is possible to differentiate arterio-sclerosis of the vessels of the splanchnic area from that confined to the superficial vessels, the former exhibiting a large, and the latter a low pulse-pressure range. 2. Pulse-pressure measurements afford a help in estimating the loss of vascular tone in arterio-sclerosis and aortic insufficiency. 3. Pulse-pressure determinations are a valuable guide in deciding how far the hypertension of kidney disease, arterio-sclerosis, and cerebral hæmorrhage ought to be reduced. 4. For a better understanding of the complex circulatory disturbances in lobar pneumonia systematic observations are

very desirable. 5. By measured exercises a very fair estimate of the functional capacity of the heart and the adequacy of the circulation can be arrived at. 6. In cardiac dilatation from any cause a light can often be thrown on the complex factors concerned in the production of dyspnœa.—Dr. F. J. Sadler, in a paper on Enteric Fever Cases treated with Vaccine, briefly outlined the history of the vaccine treatment of enteric fever, and showed photographs of the temperature charts of cases treated with injections of killed typhoid bacilli during 1910 at the Kendray Hospital, Barnsley. After showing the charts of mild, medium, and severe cases of enteric fever treated without vaccine in 1909, and with vaccine in 1910, Dr. Sadler showed the charts of all the cases which had contributed to establish his present arrangements of doses and intervals between doses, and also the charts of those patients in which the vaccine had failed to give benefit. He claimed that with suitable doses and intervals enteric fever was markedly reduced in severity in all cases except a few of those with bad brain poisoning, provided the treatment commenced in the first fortnight of the disease.—Dr. Arthur J. Hall showed: 1. A case of so-called "Conglomerate Acne," due to bromide of potassium, in a baby seven months old, who had been given small daily doses of a patent soothing mixture during a period of three weeks. 2. A case of Pneumococcal Peritonitis in a little girl, diagnosed as tuberculous, which had been allowed to burst at the umbilicus. This was followed by a steady and uninterrupted recovery. Gram-positive diplococci were found in the pus. 3. Two cases of Recurrent Cholæmia with Splenomegaly of family type. The patients were a mother and son, aged 46 and 24 years respectively. Another son who only lived one year was similarly affected.

CLINICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on March 21st, Mr. John Rust, Vice-President, being in the chair.—Mr. J. Howson Ray, the President, delivered an address on the Surgical Affections of the Hip-joint in Infancy and Childhood, which was illustrated by lantern slides and by museum specimens. The development of the hip-joint was described and the stages in the formation of the acetabulum were shown by means of a photograph of a section of the joint in a three months' human fœtus, and by serial sections of the same joint in another human fœtus of three and a half months. The diseases of the joint in infancy and childhood were then described, with special reference to tuberculous lesions, and the statistics of the Manchester Children's Hospital relating to the in-patient treatment of tuberculous hip were given and analysed, special attention being drawn to the conservative tendency of modern treatment of this condition. Lantern slides showing radiograms of the tuberculous hip in various stages were exhibited, and the President then turned to the various deformities of the hip-joint, giving an account, with photographs, of cases of coxa vara, coxa valga, and some intermediate rickety deformities, as well as a brief reference to some of the commoner injuries of this region. The address concluded with a detailed account of congenital dislocation of the hip and a series of X ray photographs, shown by means of lantern slides, and illustrating the various grades of this malformation and of the joint structures before and after successful manipulative reduction by the method of Lorenz. The treatment of congenital dislocation was discussed and the more prominent features in the treatment were presented by means of lantern slides.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 15th, Mr. W. Morley Willis, the President, being in the chair.—In the absence of Dr. Sarah Gray, Dr. Amelia Le Pelley read her paper on Dysmenorrhœa. Dr. Sarah Gray divided dysmenorrhœa into two classes—(1) spasmodic and (2) congestive. She showed that in the normal process of menstruation the duration of the flow was dependent on the osmotic pressure in the blood. In spasmodic dysmenorrhœa there were waves of pain preceding the flow and lasting from a few minutes to several days. This type of pain was associated with an infantile uterus, anteflexion, and sterility, and was generally cured by pregnancy or artificial dilatation of the cervix. A semi-vegetarian diet was also of great use. The character of the pain was different in congestive dysmenorrhœa, being of a heavy, dragging type, constant and preceding the flow. This type was more common in multiparæ, in cases of retroflexion of the uterus, and where organic disease of the pelvic organs was present; moreover, it was often left-sided.—Dr. H. Michie thought that where there was no disease of the appendages the condition of the uterus was responsible for dysmenorrhœa. The chief morbid conditions leading to this were retroflexion, anteflexion, occasionally stenosis of the os, polypus of the cervical canal, and myomata. Drugs at the best were only palliative, while surgery made an attempt to produce a radical cure. The general health should be improved by exercises and tonics; ergot was useful in profuse hæmorrhage, and constipation should be corrected. For the actual relief of pain, antipyrin, phenacetin, and even opium were sometimes of use, but alcohol was absolutely dangerous. Pregnancy was Nature's best cure. He advised dilating the cervix with Hegar's dilators up to Nos. 12 to 14 and curetting any granulations. Malpositions should be corrected with pessaries, and in membranous dysmenorrhœa the endometrium should be cauterised with some acid.—Mr. R. G. Hogarth thought it difficult to dilate with Hegar's dilators beyond No. 8 without tearing the cervix. He advised cutting through the posterior lip of the cervix and permanently enlarging the cervix by removing a wedge-shaped piece and stitching the edges to the vagina. For membranous dysmenorrhœa he urged supra-vaginal hysterectomy as the only safe cure.—Dr. J. Watson said that tents inserted the previous day rendered dilatation very easy. Ergotine citrate 1-100 gr. was very efficacious when administered on the first day.—Dr. R. Alderson, Dr. W. Hunter, Mr. T. B. Gilbart-Smith, Mr. A. M. Webber, and Miss H. M. Greene continued the discussion.

MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.—A meeting of this society was held on March 17th, Dr. J. M. Cowan being in the chair. The meeting took the form of a demonstration of children's diseases.—Dr. J. H. Nicoll showed cases and lantern slides in illustration of the varieties of Hare-lip and Cleft Palate, and of the operative treatment of these deformities.—Dr. R. Barclay Ness showed: (1) A girl, aged 7 years, with Paroxysmal Hæmoglobinuria; (2) a boy, aged 3 years, with Infantile Paralysis affecting limbs and trunk; and (3) the Brain from a girl, aged 4½ years, with Tuberculous Tumours of the Left Crus and Pons.—Dr. G. H. Edington showed: (1) Specimens of Encysted Hydrocele of Cord with Open Processus Vaginalis; (2) Urethral Calculus; (3) Os Calcis excised for Tuberculosis; (4) the Upper End of Femur (excised) showing changes in long-standing Morbus Coxæ; (5) portions of Tibia and Fibula removed by Stiles's method; and (6) skiagrams of Separation of Upper Epiphysis of Humerus.—Dr. Alexander MacLennan showed: (1) Some cases operated on for Hernia; (2) a child on whom a plastic operation had been done for Supernumerary Thumb; (3) Stereophotograph of child before, and child after, Plastic Operation on Eyelid; (4) Photograph before and after operation on a Child's Eyelid; and (5) Stereos illustrating some conditions about the Umbilicus.—Dr. George A. Allan showed two cases of Muscular Atrophy: (1) Pseudo-hypertrophic Muscular Paralysis in a child aged 2 years; and (2) Atrophy in the Muscles of one upper limb in a boy aged 14 years.—Dr. Archibald Young showed: (1) A boy, aged 14 years, after operation for repair of Complete Cleft of Hard and Soft Palate; (2) a girl operated on in 1905 for extensive Compound Fracture of the Skull (trephined over middle meningeal on both sides); and (3) a boy, aged 9 years, in whom a large gap in the skull, resulting from a Depressed and Comminuted Fracture of the Vault, was repaired by bone-grafting.

BATH CLINICAL SOCIETY.—A meeting of this society was held on March 3rd, Mr. F. Lace, the President, being in the chair—Mr. Forbes Fraser showed a case of Ascites in a woman aged 58 years, cured by drainage through the femoral canal.—Dr. Rupert Waterhouse showed a specimen of Cysticercus Cellulosæ removed from the subcutaneous tissue of a man aged 28 years, also shown, who had been suffering from headache, vomiting, optic neuritis, fits, and paralysis of the right external rectus muscle. There was pronounced eosinophilia of the blood and cerebro-spinal fluid, and 27 cysticerci could be discovered in different parts of his body and limbs. The optic neuritis had completely disappeared and the other symptoms were subsiding.—Mr. T. P. Lowe read a paper on Metatarsalgia. He found that this disease

was of fairly common occurrence, many patients labelled gout or rheumatism really suffering from this disease, which he considered to be a pressure neuralgia, although in one-third of the cases there was a history of injury. He divided the cases into three classes according to their severity, and the treatment depended upon the degree present. He found that in the first degree it was sufficient to abstain from any action which produced pain and to modify the boot so as to invert the foot. That was readily done by adopting the wedge-shaped sole. In the second degree, in addition to the measures already enumerated, the sole of the boot should be thickened about half an inch behind the heads of the metatarsal bones, and a band of hospital strapping worn round the instep. Hot and cold douches or the local application of belladonna were very useful when the pain was severe. In the third degree he found that excision of the head of the fourth metatarsal bone was the only treatment.

Reviews and Notices of Books.

Innere Sekretion, ihre Physiologischen Grundlagen und ihre Bedeutung für die Pathologie. Von Professor Dr. ARTUR BIEDL, Wien. Mit einem Vorwort von Hofrath Professor Dr. R. PALTAUF, Wien. Berlin and Vienna: Urban and Schwarzenberg. 1910. Pp. 538. Price, paper, 20 marks; bound, 22 marks.

THIS monograph of 538 pages contains 27 pages of closely printed references to the literature of the subject with which it deals, but the author modestly explains that the bibliography is far from complete, as he has omitted all references to the older literature. The work gives by far the fullest account of internal secretions yet published, exceeding in its wealth of detail even that published by Swale Vincent in "Ergebnisse der Physiologie." The engaging aspects of the question from a morphological, chemical, functional, and practical point of view are well set forth, but we wish that the text had been interspersed with some illustrations, but none are given.

After a short general introduction, which deals briefly with the history of the subject, the definition and general conception of the term "internal secretions" and their classification, the author explains the immense importance of the chemical aspect of the question—a question crystallised by the work of Bayliss and Starling, and resulting in the coining of a word, "hormone," which brought once more into prominence the old, and in part forgotten, doctrine of the "humours" of the ancients. Such terms as "sympathetic" reflect the interorganic relationship on the nervous side; consequently when the reflex function of the nervous system was discovered, in which Prochaska, a Vienna physiologist, took a leading introductory part, there arose the tendency to give prepotency in certain obscure co-relations to the "influence" of the nervous system. The discovery that organs without ducts, as well as those having them, produced internal secretions, revolutionised our conceptions of the relation between different organs, the blood channel being the highway of communication. How sterile in result had been the previous study of the largest gland in the body—the liver—is shown by the fact that morphology taught us nothing about "internal secretions." Bernard himself did not arrive at his classical results on the glycogenic function of the liver in 1855, the year in which Thomas Addison published his famous paper on "The Constitutional and Local Effects of Disease of the Suprarenal Capsules," by a direct attack. Indirectly he reinstated the liver as the dominant organ that stands between the intestinal blood stream and the general venous blood stream.

The "Special Part," which occupies practically the bulk of the volume, roughly about 400 pages, deals with the thyroid apparatus, thymus, "suprarenal system," hypophysis, pineal gland, genital glands, internal secretion of the pancreas, stomach, intestinal mucous membrane, and the kidney. The glycogenic function of the liver is purposely omitted, and so is its function of antagonising various poisonous bodies. That there are several ways of intercommunication between the organs of the body is now well known. In the higher animals two main channels exist—the *neural* for speed, and the *humoral*, or chemical, for interorganic relations, as the author expresses it, for a *consensus partium*. In 1855 Bernard introduced the term "internal secretion," but it is claimed by the author that A. A. Berthold, in Göttingen, in 1849, was incontestably the first person not only to have proved the existence of an "internal secretion," but to have recognised its significance. The experiment cited in support of this contention is the transplantation of the testes of a cock to another part of the animal's body, with the result that in voice and the development of what are now known as secondary sexual characters the animal presented exactly the characteristics of one in which the testes had been left *in situ*. Dr. Berthold formulates the conclusion that the *consensus partium* was due to the "productive function" of the testis exerted by its action on the blood. In 1869 Brown-Séquard expressed the view that all glands—with or without ducts—supplied to the blood useful or necessary substance, and that in their absence pathological results accrued. We have travelled far from June 1st, 1889, when Brown-Séquard introduced his "liquide testiculaire" and the laying of the foundation of what has been called "organo-therapeutics."

Dr. Biedl's treatise is a most painstaking, successful, and erudite collection of all that is known on the subject of the "chemical correlations" that obtain in the body. The subject has both a positive side—e.g., the production of "hormones"—and a negative one—viz., the activities of an organ whereby noxious substances circulating in our blood are rendered inoffensive—which carries one back to 1824 when Wöhler discovered the union between benzoic acid and glycocoll, while Baumann, again, in 1879 showed how poisonous phenol derivatives of proteins are rendered innocuous in the liver by being joined to the radicle of a sulphur compound. Dr. Biedl is led to classify "hormones" into "assimilatory" and "dissimilatory," the one being anabolic, the other katabolic.

Some idea of the importance of the blood-stream may be obtained by remembering that in the dog the whole of the blood in the body passes 16 times a day through the thyroid gland. About 90 pages of the book are devoted to the thyroid apparatus. A suggestive table shows the probable relation of the thyroid apparatus, not only to cretinism and myxœdema, but to Graves's disease, tetany, myotonia, and paralysis agitans. A very full account of hyperthyroidism and its bearing on disease is given. Over 150 pages are devoted to the suprarenal glands, which are treated with a thoroughness that leaves nothing to be desired so far as description is concerned, though here, in particular, the interest would have been heightened and the printed text more easily elucidated by the introduction of illustrations.

We have seen but few slips. Presumably, in the author's reference to R. Hutchinson, it is Hutchison that is meant (p. 29 and p. 471); and in another place Drexel, we think, should be Drechsel, for he it was who found iodine in certain corals. Warm commendations are due to the author for the enormous labour he has expended in collating practically all the known facts that relate to "internal secretions." We strongly commend the perusal of this treatise to physiologists, to practitioners, and to zoologists.

Radium: Its Physics and Therapeutics. By DAWSON F. D. TURNER, M.D. Edin., F.R.C.P. Edin., Medical Officer in Charge of the Electrical Department, Royal Infirmary, Edinburgh. London: Baillière, Tindall, and Cox. 1911. Pp. 86. Price 5*s.* net.

THIS is a small but very valuable work upon the subject of radium which has been prepared for the use of medical men in such form as will be found most convenient where time is not available to study the larger works that have appeared recently. The practitioner who is interested in the subject will find here all that is accurately known, and the book should do much to dispel the confusion that exists in the minds of many whose information is gained from the more or less loosely connected articles that appear in the medical journals from time to time.

In dealing with radium, as also in the case of the X rays, there is great difficulty in obtaining a satisfactory method of measurement, and many observers have their own ideas as to what should be taken as a standard of radio-activity. We note that the author thinks it should be stated in terms of the amount of pure anhydrous radium bromide contained in any given specimen. We cannot help thinking that it would have been better to have fallen in with the method adopted at the International Standards Committee at Brussels last year, which is to reckon the amount of metallic radium present. There is, perhaps, little to choose between the two, but as the sulphate and the carbonate of radium are often employed calculations based upon the amount of metallic radium would tend to a greater uniformity.

In the later chapters some results which the author has obtained in his own experience are given. Considerable success seems to have been secured in the treatment of cases of rodent ulcer, nævi, and pruritus, among others. Many of these are illustrated with excellent engravings from photographs taken before and after treatment. Dr. Turner has little to add on the subject of the treatment of malignant disease. The power possessed by radium to cause the disappearance of small malignant growths, as also to cause a considerable shrinkage at times in the more extensive ones, is readily admitted; but so far as helping us out in inoperable cases, we are still very much where we were before radium was discovered.

Plasma und Zelle. Eine Allgemeine Anatomie der lebendigen Masse. Bearbeitet von Professor Dr. MARTIN HEIDENHAIN in Tübingen. Zweite Lieferung: Die Kontraktile Substanz, die Nervöse Substanz, die Fadengerüstlehre und ihre Objekte. 1 Lith. Tafel und 395 Abbildungen. Jena: Gustav Fischer. 1911. Pp. 507—1100. Price, paper, 23 marks; bound, 24.50.

THE simplicity of the title might lead one to suppose that the matter with which it deals could be set forth in a less compendious form. Part I., which appeared in 1907, contains 506 pages; Part II. is equally bulky, and forms the nineteenth part of Bardeleben's "Handbuch der Anatomie des Menschen," and we are promised a third and final part.

The part before us (Part II.) deals with contractile substance, nervous substance, and the fibrous tissues and their uses, the whole comprising a general anatomical treatise on "living masses." Each of these great sections is preceded by a most methodical arrangement of the subjects dealt with, so that we can see at a glance the main contents of each chapter. The author begins with the question: "What is contractility?" treating it at first from the historical and then from the histological point of view. Naturally we turn to the subject of cardiac muscle, a subject which the author has done so much to elucidate. We think it would surprise most readers, even those most conversant with the structure of cardiac muscle, to read the elaborate account here given of the heart fibres in invertebrates as well as in vertebrates, for from a morphological point of view they should not be separated. In discussing the fibrillation theory of striped skeletal muscle, dating from Schwann (1839–40), we are introduced to Bowman's famous "sarcous element" and the cleavage of fibres into discs. The various theories of muscular contraction are passed in review. Perhaps some of them might have been omitted and left in the oblivion they deserve. The photographic reproductions and illustrations are specially good, not only in the part dealing with muscle, but throughout the rest of the book. A glance at the literature of muscle in general shows how relatively small is the number of English investigators of this subject as compared with German and French observers. Amongst the more recent observers we find the names of Bowman, Dobie, Schäfer, and Haycraft.

To the "Nervous Substance" about 260 pages are given. It is impossible to go into detail, but the following scheme shows roughly how thoroughly the whole subject is dealt with. After a short introduction on the physiological aspect the general morphology of nerve cells and fibres is dealt with, first historically, and then the neuron doctrine is considered in all its applications, both in vertebrates and invertebrates, and in so doing the minutest and fullest details of structure are given. The fibrillation of nerve fibres and cells and the networks existing in cells are fully described and illustrated. One of the chapters that will interest surgeons perhaps most is that on the development, degeneration, and regeneration of nerve fibres, considering the neuron as a trophic unit. This chapter is particularly full and lucid and should prove of great interest also to the physiologist and pathologist. The great array of illustrations representing regenerating nerve fibres forming new peripheral connexions is particularly instructive and helpful. Lastly, there is a long chapter on the "plasma" structure of nervous matter. The references to the literature of this section run to ten pages.

The last section deals with the epidermis, ciliated epithelium, intestinal and rodded epithelium, chromophores and pigment cells, cartilage cells, connective tissue and neuroglia, the red blood corpuscles and their cortical stripes, and the more recently introduced term, the "mitochondria." The whole constitutes an elaborate treatise on cytology, which will form a quarry in which the human anatomist and the zoologist alike will find all the latest work incorporated. They may be overawed at the enormously elaborated series of new words that have had to be coined to keep pace with the discoveries that are still being made by the newer methods in the constitution of a cell.

Only one endowed with devotion to his art and with indomitable perseverance could have produced a work so extensive, accurate, and useful for reference as is that from the pen of Professor Martin Heidenhain—a work worthy of the great University of Tübingen. We have much pleasure in commending this treatise, nor must we forget the very liberal way in which it is illustrated by the well-known publisher of Jena, Gustav Fischer.

LIBRARY TABLE.

A Manual of Chemistry. By ARTHUR P. LUFF, M.D., B.Sc. Lond., F.R.C.P. Lond., F.I.C., and HUGH C. H. CANDY, B.A., B.Sc., F.I.C. New and enlarged edition. With 46 illustrations. London: Cassell and Co., Limited. 1910. Price 7*s.* 6*d.* net. Pp. 622.—We have pointed out on a previous occasion the usefulness of this book for the student of medicine, and now that it has been brought into line with modern advances and fresh material has been added it appeals still more strongly to the reader for whom it was particularly designed. As examples of expanding the subject, we may quote Mr. Candy's

additions to Part II., which include a detailed account of the estimation, required by students reading for the First M.B. London or for the D.P.H., of oxygen and carbon dioxide in air or other gaseous mixture by absorption. In Part III. again a short description is given of tests for ordinary impurities in substances commonly used in medicine, and for the student's guidance the substances are described and a list given of their likely impurities as pointed out in the Pharmacopœia. Part IV. has received considerable revision and expansion, while Part V., which deals with the working of chemical problems, is a new and valuable feature of the work. The book throughout bears evidence of the writers' experience as to what material to put successfully before the student.

Introduction to Practical Organic Chemistry. By A. M. KELLAS, B.Sc. Lond., Ph.D. Heidelberg. London: Henry Frowde and Hodder and Stoughton. 1910. Pp. 204. Price 3*s.* 6*d.* net.—The modern practical handbook on organic chemistry is, generally speaking, a great advance on what such books used to be a score of years ago. As Dr. Kellas points out in the preface of this excellent book, organic chemistry is one of the most systematic divisions of natural science, but it is comparatively recently that practical textbooks seem to have sufficiently recognised this fundamental fact. Acting upon this principle, he has produced a volume which aims at system and utility for each portion of the subject. The preparations follow the order in which they are discussed in studying the theoretical part of the subject, and general reactions are indicated as clearly as possible, so that the student may grasp the theoretical considerations of the science. The practical directions in regard to both qualitative and quantitative analysis are plainly set out, and the tests are evidently those which the author himself has found trustworthy. In some instances we think the tests might have been extended. As an example may be mentioned the tests for benzoic acid, which are not very distinctive if it happens that the acid is present in small amount. It is not easy to identify benzoic acid by the iron reaction in such a case, and it is hardly possible, of course, to convert it into a recognisable quantity of benzene. The oxidation test which converts it into salicylic acid seems more certain. There are two appendices, the first giving a summary of tests for special substances and the reactions of important alkaloids, while the second includes a summary of the London University Syllabus tests, a scheme of analysis for substances included in that syllabus, a series of special quantitative determinations, and the preparation of cholesterol, cystine, tyrosine, and tryptophane. The book fulfils its purpose in covering the ground of most university courses, and it may be confidently commended to the student.

A Manual on Dental Metallurgy. By ERNEST A. SMITH, Associate of the Royal School of Mines, London; Member of the Institute of Mining and Metallurgy, the Institute of Metals, and of the Society of Chemical Industry; late Assistant Instructor in Metallurgy, Royal School of Mines, London. Third edition. London: J. and A. Churchill. 1910. Pp. 304. Price 6*s.* 6*d.* net.—We foreshadowed the utility of this excellent manual in a notice of the first edition and we are glad to find that our view of it receives confirmation in the fact of the issue of a third edition. It contains exactly the information required by the dental student on the metallurgical side of his studies. The chemistry of the metals employed alone or as amalgams is clearly described, and the salts used as the basis of cements receive similar attention. An important feature of the third edition is the addition of questions set by the Royal College of Surgeons of England for the examination in dental metallurgy during the years 1900 to 1909. We feel confident in repeating our appreciation of this book.

Laboratory Notes on Organic Chemistry for Medical Students. By PAUL HAAS, D.Sc., Ph.D. London: Macmillan and Co., Limited. 1910. Pp. 128. Price 2*s.* 6*d.* net.—From his position as demonstrator of chemistry and toxicology in the Medical School of St. Thomas's Hospital, Dr. Haas has gained a close acquaintance with the needs of medical students preparing their chemistry. But while this little book covers, and extends somewhat beyond, the syllabus of the practical examination in organic and applied chemistry of London University, the author properly cautions the student that chemistry is not to be regarded as merely an examination subject, inasmuch as year by year chemistry comes into increasing importance "as a valuable adjunct to his knowledge for the fuller appreciation of his clinical and other studies." The directions are clear and sound, and theoretical considerations are plainly set forth. This is an excellent guide to successful laboratory work with organic substances.

JOURNALS AND MAGAZINES.

Transactions of the Society of Tropical Medicine, No. 5, March, 1911.—This number of the Transactions contains an extremely valuable paper by Professor Ronald Ross, C.B., F.R.S., entitled, "Some Enumerative Studies on Malaria, Blackwater Fever, and Sleeping Sickness," forming a more detailed account of the author's "enumerative studies" which he had already brought before the society in June last year. Professor Ross advocates the systematic counting of organisms present in the blood of men and animals infected with given parasites in order to ascertain the correlation, if any, which exists between such numbers and various symptoms, including fever, anæmia, excretions, hæmoglobin, leucocytes, &c.; also with a view to determine with some degree of exactitude the effect of various remedies; and lastly, to obtain more light upon the general phenomena of the parasitic invasion. Professor Ross in his paper gives details of the technique which he employs, and which would seem to require some skill and experience in its application. Several charts are appended showing the results of the counts which had been made in certain instances. The paper is well worth special study; it appears to open up a new field of investigation and one which is likely to throw fresh light upon parasitic diseases.

The Liverpool Medico-Chirurgical Journal.—We can always look for interesting matter in this journal. In the issue for January Dr. Thomas R. Bradshaw gives a short account of the life and work of the great Sydenham and of his influence in turning the attention of the profession from theory to observation. Dr. R. Stopford Taylor and Dr. R. W. MacKenna give their experiences with salvarsan in the treatment of syphilis, and Dr. John Hay writes on the prognosis and treatment of the senile heart. Two articles are devoted to varicose veins, written respectively by Dr. R. E. Kelly and Mr. K. W. Monsarrat, while the latter writer and also Dr. N. Percy Marsh deal with stenosis of the pylorus in infants. A case of tuberculous laryngitis in an infant aged 17 months is recorded by Dr. John Middlemass Hunt. Dr. Ernest E. Glynn and Mr. R. C. Dun contribute an interesting article on the association of suprarenal tumours with precocity in children and record a new case of this condition. There are also valuable papers by other authors on subjects connected with gynæcology and pathology.

The Medical Chroniole.—In the February number Dr. W. B. Warrington discusses the deferred effects of head injuries. These he divides into general effects, such as giddiness,

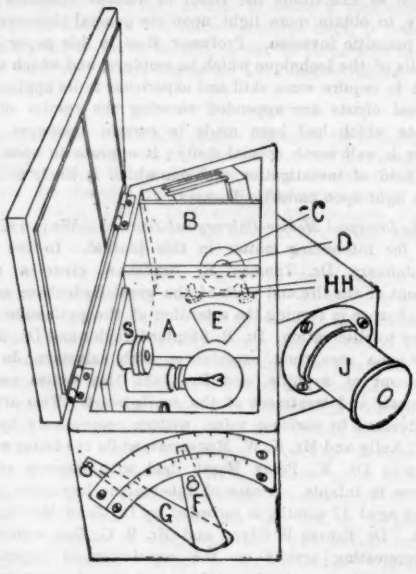
vomiting, sleeplessness, headache, and alterations of character, loss of memory, insanity, late or delayed traumatic epilepsy, and ordinary traumatic epilepsy. Many of these conditions are of considerable medico-legal importance in connexion with workmen's compensation and similar matters.

The Birmingham Medical Review.—The Richard Middlemore Post-Graduate Lecture, delivered by Mr. Sydney Stephenson and published in the February issue of this review, deals with the aftermath of eye-strain, a condition of which the importance is now generally recognised. It is noteworthy that it is in cases of slight rather than of severe error of refraction that these troubles usually arise. They may take such forms as headache, giddiness, various habit-spasms, and possibly of epileptic seizures. Dr. W. B. Knobel contributes a paper on X rays in the diagnosis of phthisis. In the March number Dr. Robert Saundby discusses the indications for surgical interference in gastric cases, and Mr. Gilbert Barling tabulates his experiences in a year's work of gastric surgery for non-malignant conditions.

New Inventions.

THE HOLOPHANE LUMETER.

THE question of light and illumination has received scant attention in the direction of real scientific study. In regard to artificial lighting, at any rate, the tendency seems to be to over-illuminate, and the possibility of evil being done to the eye does not appear to count. Artificial lights are in a large proportion of cases put in the wrong place, and when they happen to be rightly situated they are often trying, perhaps because they are too intense or perhaps because they distribute rays of an objectionable character. The Holophane lumeter may therefore be accorded a word of praise, inasmuch as it is designed to bring some amount of standardisation



into the question. It can be used, for example, for ascertaining whether the light on a book is sufficient to read without straining the eyes, whether in a room that may be well lighted centrally the corners are properly illuminated, or what is the illumination of wall-paper, curtains, &c. Again, it may be used for measuring the changes of light at different times of the day or year or in different positions or localities, the relative intensity of the lights and shadows in a landscape picture or engraving, or the absorption of light produced by glass or other transparent materials. The principle upon which the apparatus is based may be understood from an inspection of the accompanying illustration of it. A is a chamber containing a small incandescent electric light, and is lined with a matt white surface; B is a dark chamber with a matt white screen C, having a small circular aperture D; E is an aperture filled with translucent glass; F G are two levers by which the illumination can be increased or decreased; H H are knobs for pulling down the dark glass "stops"; S is a screw keeping the lamp slide in position; and J is the eyepiece. The method of use is as follows: The photometer being held in the hand is pointed at the object to be examined, so that in looking through the eyepiece, the object, or portion of it, is seen through the circular aperture of the matt white screen inside the instrument, and by means of the indicators which regulate the illumination, the intensity of the brilliancy of the matt white screen is varied until it exactly corresponds with the intensity of the object which appears in its centre. If the object is white this can be done till the whole surface appears to be uniform and it is not possible to see that it consists of a perforated screen and an object. The intensity of the light reflected by the object under examination is then given on the scales on which the indicators read. For measuring objects which are brighter than 1 candle foot slides are provided which introduce dark glasses.

As is pointed out, the usual type of photometer determines the brightness of a lamp or other source of illumination, but cannot be used to ascertain the brightness of an object or surface. The measurement of such sources of light is useful and can be made with the Holophane lumeter by means of a special attachment, but the measurement of the illumination of a surface or object is what is of real value. It is seldom that a light is looked at directly, but only at the objects illuminated by it.

The apparatus is a very ingenious one and is designed by the well-known manufacturing opticians, Messrs. R. and J. Beck, Limited, of 68, Cornhill, London, E.C.

Looking Back.

FROM

THE LANCET, *SATURDAY*, March 30th, 1833.

The history of migraine* then having been sufficiently discussed, I now come to the diagnosis. I have already said, that neuralgia and some other local organic diseases, were the affections most likely to create suspicion in this respect. M. Piorry, indeed, is of opinion, that migraine is nothing more than mere neuralgia. He considers so from the causes and phenomena of the affection. Exercise of the eyes, such as prolonged study, in the first place; secondly, the urgent desire, during the access, for ocular repose; thirdly, the fact that in the vast majority of cases the pain originates in the eye; fourthly, the frequent redness of the external parts of this organ; fifthly, the sympathetic occurrence of vomiting, a symptom so generally connected with operations on the eyes, and especially on the iris. Such are the leading facts which induce M. Piorry to suppose that migraine is, in fact, a neuralgia of the iris and nerves of the orbit. The doctrine is certainly an ingenious one; it reposes, too, on facts true to a certain extent. In M. Piorry's book, however, many cases are described as migraine which certainly were not examples of that disease, and these cases were as evidently ophthalmic neuralgia. The just conclusion then is, that there are many neuralgiæ not migraines, and migraines not neuralgiæ, strictly so speaking. This is, in point of fact, the sum of our knowledge on the subject. We are not yet entitled to specify the peculiar nerves which are the seat of the disease. Should we ever arrive at that knowledge, the affection will then be classed as a specific neuralgia, and denominated accordingly.

* Excerpt from Lectures on Medical Pathology, delivered in the University of Paris, by M. ANDRAL, D.M.P., &c. Lecture XVII Perversions of Sensibility, continued.

THE LANCET.

LONDON: SATURDAY, APRIL 1, 1911.

The Problem of Sunday Entertainments and the Metropolitan Hospital Sunday Fund.

WE dealt in a recent issue of THE LANCET with the serious question which has arisen in the Council of the Metropolitan Hospital Sunday Fund owing to certain of the hospitals, which are regular beneficiaries under the Fund, having taken means to secure the receipts of cinematograph entertainments now held on Sunday with the permission of the London County Council, the condition laid down by the London County Council being that after the deduction of a reasonable sum for expenses the profits of these Sunday shows should go to charity. We pointed out at the time when the question arose that the Council of the Metropolitan Hospital Sunday Fund was placed in a very serious dilemma. On the one hand, any alliance between the charities benefiting by the Fund and entertainments held on Sunday was bound to alienate the sympathies from the Fund of some of its most important supporters, having regard to the fact that the Fund is a religious institution. On the other hand, the attitude of the Council of the Fund, if it registered any objection to such an alliance, could be interpreted either as an undue inquisition into the sources of the income of hospitals or as a narrow opposition to any form of Sunday entertainment. That the many difficulties presented by these questions were recognised by the Council of the Fund was proved by the fact that a resolution, which a fortnight ago was in the first instance virtually passed, and which had for its object the penalisation of the charities which trafficked in cinematograph shows, was later referred back to the General Purposes Committee, from which it had emanated, for further consideration.

The General Purposes Committee, having gone again fully into the subject, proposed on Tuesday last at a meeting of the Council that the Council should adopt the following recommendation, which is a modification of the original proposal:—

"That the Council has fully considered the recommendations of the General Purposes Committee on the subject of Sunday cinematograph entertainments run by hospitals, as well as the proposal of certain places of worship to ear-mark their collections for hospitals which do not participate in the proceeds of such shows, and, while not expressing any opinion upon the expediency or otherwise of Sunday entertainments, resolves that, in the event of the collections for the Fund suffering any diminution which may be fairly attributable to this action of certain hospitals, it shall be a recommendation to the Committee of Distribution to take the same into consideration when making their awards for the year."

We most earnestly hope that this resolution will not be allowed by any who disagree with it to interfere with the integrity of the Fund; for this is the danger. Had the resolution not been passed the result to the Fund would have been that certain congregations, in sending their contributions to the general collection, would have demanded that they should be ear-marked in such a way as to exclude up to a certain point the charities with whose action they could not agree. This would be indeed a most unfortunate result for the Fund, which exists, in our opinion, largely for the coördination of charity in the metropolis generally and not for the benefit by local philanthropy of local institutions. We did not, for our own part, in previously discussing the whole subject, consider this risk to be very real, and even now hope that it has been exaggerated; but having regard to the fact that all the points have been carefully debated on more than one occasion by the General Purposes Committee, with the result that they have made the recommendation printed above, we admit that there must have been present in the minds of that Committee a feeling that the risk was very substantial and should be legislated against. Our own impression is that the integrity of the Fund is more threatened by the possibility that the public should attribute to those who administer the Fund, laymen as well as clergymen, a spirit of Sabbatarianism, and should in consequence withhold contributions. Archdeacon SINCLAIR, chairman of the General Purposes Committee, in proposing to the Fund the adoption of the resolution deprecating the method of collecting money for hospitals through cinematograph shows, protested that no such narrow motive has influenced the General Purposes Committee, which does not urge any movement against the licensing of cinematograph shows on Sunday. The Committee, he said, proposed by its recommendation to guard against a danger threatening the peace and harmony of the Fund. We trust sincerely that the action of the Council of the Fund in adopting the recommendation of the General Purposes Committee will have achieved this happy object. At all events, the penalisation of those charities which have entered into an alliance with the owners of cinematograph shows is not a very vigorous or even a very definite one. The recommendation is that, in the event of the collections of the Fund suffering any diminution which may be fairly attributable to the action of certain hospitals, the awards for the year should take the circumstances into account; but there must be—it will occur to everybody—some difficulty in proving the real cause of any retrogression in the collections of the Fund.

Ankylostoma Infection.

PARASITOLOGY, at one time a by-path in medicine, more or less neglected, has now become elevated to a position in the field of pathology second only in importance to bacteriology, and its scientific study has already rendered valuable service in treatment. It further promises almost incredible benefits in the future when preventive measures based upon a full and accurate knowledge of the life-history of the parasites of man and of animals coming into relation with him shall have been put into action effectively, and when mankind in general shall have become educated to the necessity for these measures. The recognition of the

important part played by animal parasites in the production of the special diseases of tropical climates is perhaps the most remarkable development of the study of parasitology. The dramatically striking results of preventive measures in regard to malaria and yellow fever alone form one of the greatest and most beneficent gifts of medical research to mankind, and give good grounds to hope for the eventual conquest of the unhealthiness of tropical climates. Of diseases due to animal parasites few within recent years have attracted so much attention as the condition of ankylostomiasis due to the miner's worm, or hook-worm. It has proved to be much more widely distributed over the world than was at first supposed, and, as stated by Dr. A. E. BOYCOTT in the interesting lectures on Ankylostoma Infection before the Royal College of Physicians of London, the last of which appears in our columns to-day, is probably responsible for more unhappiness and inefficiency than any other parasites, with the possible exception of the malarial organisms. The discovery of a hook-worm parasite in man appears to have been made by DUBINI of Milan in 1843, but it was not until 1882 that the importance of this parasite as a pathogenic agent in man was established, owing to the occurrence of grave cases of anæmia among the men working in the construction of the St. Gothard tunnel. Since that time it has been found very widely distributed, in both hemispheres, and many obscure forms of anæmia have eventually proved to be due to ankylostomiasis. Its occurrence in the brickfields near Cologne and in the coal-mines of Germany, France, Belgium, and Hungary has led to a careful study of the life-history and biological properties of the parasite. The discovery by Dr. C. W. STILES in 1902 of a separate and distinct form of the parasite widely distributed in America, and the remarkable observations by LOOSS of Cairo in 1898 that infection could take place by the penetration of larvæ through the unbroken skin both mark important advances in our knowledge of these parasites and their effects. In this country the subject was regarded as one of general rather than local interest until the end of 1902, when it was discovered by Dr. J. S. HALDANE that a condition of anæmia, with certain cutaneous outbreaks locally known as "bunches," occurring among the miners in certain Cornish mines, was due to the ankylostoma duodenale. This outbreak of the disease was carefully studied by Dr. HALDANE, in collaboration with Dr. BOYCOTT, and afforded some interesting additions to our knowledge of the effects of the parasite. In his lectures Dr. BOYCOTT has given a critical review of the present state of our knowledge in regard to many of the problems in connexion with ankylostomiasis and its spread.

At the outset Dr. BOYCOTT draws an important distinction between ankylostomiasis and ankylostoma infection. Any individual who harbours these parasites in his intestine is a "worm-carrier" and is the subject of ankylostoma infection, but he may show no evidence of this other than the passage of ova and the presence of an eosinophile reaction in his blood; whereas if the number of parasites be sufficient, grave anæmia, dyspepsia, and other disabling symptoms occur, and the patient is the subject of the disease ankylostomiasis. The worm-carrier may be as important a factor in the dissemination of the disease as the bacterial carrier is in connexion with diseases such as typhoid fever and diphtheria, unless adequate precautions are taken. This aspect of the problem has been carefully studied in the Westphalian collieries, where an organised system of examination of the workers in infected mines was established, and treatment given to all found harbouring the parasite, the expense being met by an excellent system of insurance, to which both employers and men contributed. Details of the results obtained by this procedure in conjunction with other preventive measures are given by Dr. BOYCOTT. In regard to the life-history of the parasite, the feature of outstanding importance is the distinction between the adult, sexual, and parasitic stage of the parasite in the intestine of man, and the larval or saprophytic stage which commences when the fæces are voided. It seems to be established that the larvæ cannot develop beyond a certain stage outside the human body, and that no multiplication occurs except in the sexually mature and parasitic stage. The properties of the larvæ, their susceptibility to heat, cold, drying, and chemical reagents, have been made the subject of exhaustive researches in many countries, and the results obtained throw considerable light upon the conditions favouring the spread of infection. The essentials for the production of infection by ankylostoma are fæcal contamination of the soil with ova of the parasite, sufficient moisture to prevent their desiccation, and temperature conditions favourable to their development. In the tropics these conditions are almost invariably to be found, and the disease spreads so widely that it is estimated that it may reduce four-fifths of the population to a permanent state of chronic ill-health, since reinfection is constantly occurring. In the north-west of Europe the conditions only coexist in certain mines and other industrial occupations such as brickmaking and tunnelling. It is interesting to note that in the Westphalian mines a remarkable increase in the incidence of the disease followed the watering of the roads to allay the dust, while it may be pointed out that in certain mines in Cornwall and France no cases occurred, although the conditions were apparently favourable, the explanation being the presence of considerable quantities of salt in the water of these mines, which hindered the development of the larvæ from the ova.

The problems opened up by the discovery of the form of the parasite, to which the names, with the qualifying adjective of American added, of Ankylostoma, Necator, and Uncinaria have been variously applied, cannot be said to be definitely solved—viz., as to whether it is generically or specifically distinct from the Ankylostoma duodenale, or is associated with any different train of symptoms. It proves to be of wide distribution, and has been found in most places where the other parasite occurs. In regard to the modes of infection by either of the worms, LOOSS's observations that the encapsuled larvæ enter by the skin, reach the lungs, pass up the trachea and down the œsophagus, have been generally confirmed. Dr. BOYCOTT records an observation of his own demonstrating this mode of infection. At the same

time, he believes that mouth infection can and does occur, and states that he was accidentally infected by this channel himself, having failed to infect himself by the skin route. It is generally admitted, however, that the latter is the more usual mode of infection, and this discovery has already proved of value in the preventive treatment of ankylostoma infection. Some of the most interesting parts of Dr. BOYCOTT'S lectures are those dealing with the blood conditions. It is well known that the hæmoglobin may prove on estimation to be as low as 30 or 15 per cent., but the observations upon the blood volume and the total quantity of hæmoglobin made by Dr. HALDANE and Dr. BOYCOTT show that there is in reality very little shortage of hæmoglobin, nearly the whole of the anæmia being due to an increase of plasma—in other words, the condition is one of hydræmic plethora like that in chlorosis. The question as to the manner in which the anæmia is produced by the worms, whether by sucking or by the production of hæmolysins, and the question of the formation of a toxic substance must still be discussed, as also the occurrence of eosinophilia and its diagnostic value. In the treatment of ankylostomiasis four chief drugs have been employed—viz., thymol, β-naphthol, eucalyptus oil, and male fern. Dr. BOYCOTT comes to the conclusions that there is no better drug for this purpose than thymol, that β naphthol and male fern had better be avoided, while eucalyptus is almost impracticable from its nauseating effects. Thymol must be given in large doses and the treatment must be repeated several times to be effective. Dr. BOYCOTT debates at some length the prophylactic measures which the knowledge of the life-history of the worm and the conditions favouring infection suggest—viz., the anthelmintic treatment of infected persons, prevention of reinfection, rendering the conditions unfavourable for the development of the larvæ, and hygienic precautions in regard to the disposal of fæces. He shows how difficult it may be to root out infection altogether even in localised outbreaks like those in Germany and Cornwall, and is not, therefore, too sanguine as to the eradication of the disease until more general precautions in regard to the disposal of fæces are taken. His lectures form a useful review of this important condition, and they illustrate how the collation of information in regard to disease from all parts of the world, rendered possible by modern means of communication, has accelerated our discovery of important facts and to some extent lessened the labours of individual workers, who are enabled to apply knowledge already acquired by others to the discovery of new facts.

The Refusal of Medical Service.

IN another column a medical correspondent invites us to express an opinion as to whether a medical practitioner is legally bound to give his professional services when called upon to do so, or whether he may refuse assistance, although a fee is tendered. The answer to the question as he states it is easily given: there is no such legal obligation as that suggested. There are, however, other obligations than those imposed by the law to be considered by the medical man who feels disinclined to attend a particular patient—obligations which will have weight in different degrees according to circumstances. We refer to the social or moral obligation, and to that imposed by humanity and professional honour alike not to allow human life to be sacrificed or grievous human suffering to be prolonged on account of any personal antipathy, or of any personal inconvenience, or of any suspicion or even certainty that the attendance given will not be remunerated. The question of remuneration occurs in the letter of our correspondent; it does not, however, appear to affect the legal obligation as to which he inquires, and the same may be said with regard to the moral obligation in cases of the nature that we have suggested. A medical man may have a strong reason for not wishing to attend a particular person who is able to remunerate him; he may be summoned to do so and may be reasonably certain that there is no urgent need for his services, and also may know that there is another medical practitioner at hand who will be glad to do all that is required. We conceive this to be an instance of the absence of legal or other obligation. On another occasion the same man may have good reason to believe that he is being summoned to a case where the patient's life would be endangered even by a few minutes' delay spent in the endeavour to obtain aid from someone other than himself. Here, of course, the medical man should go at once, and he always does go.

The moral obligation will depend upon a variety of circumstances, but will not be affected in such a case by the certainty or uncertainty of remuneration. But consideration must be given to the probability that in the event of death occurring after a refusal of medical aid, although it may be clear to those who can appreciate the circumstances that death was not in consequence of such refusal, a coroner's jury will record an adverse opinion upon conduct of which a possibly prejudiced and inaccurate account will be made public. This is a separate element of the case to be taken into account in arriving at a decision; it does not affect the moral obligation. But the position of the medical man in relation to some who desire to be his patients is not that of a person who, because he has devoted time and money to acquiring scientific knowledge and skill, is expected to be the servant, paid or unpaid, of anyone who may desire to employ him. This view our correspondent may rightly resent, refusing not only for his own sake, but from a sense of what is due to his profession to be so regarded. On the other hand, the medical practitioner who analyses the incidents of his professional life will remember many occasions on which he has found himself called upon to exercise his scientific knowledge and skill by a sentiment of humanity and a feeling of duty beyond his own control, but influencing equally his fellow men in other walks of life, or in the ranks of unemployment, according to their qualification to assist in attaining the same object. In illustration let us suppose a child to have fallen into water and to have been rescued by a passer-by at some risk of his own life, and to the certain injury of his clothes. The child is laid insensible on bank or towing path at the feet of a medical man also present by chance. The latter, of course, without hesitation devotes himself immediately to the resuscitation of the rescued child. No question of remuneration, of parental gratitude, or of any

other consideration arises in his mind any more than it did in that of the layman who had the opportunity to save life and took it, being himself perhaps aided by proficiency as a swimmer. Either the primary saviour or the second saviour of the child may later find their services rewarded, but neither would act with this idea before him. If, however, we suppose the medical man to be at home at the time of the accident, and to be summoned by messenger, when more or less busy with other matters, we shall see that our criticism of him should he refuse to attend will depend not upon the urgency of the child's need of treatment, but upon the extent of the medical man's knowledge of that need, upon the clearness of the information conveyed to him, upon his power to leave the matter in hand (possibly a patient also requiring his attention), upon his knowledge that no other assistance than his own is obtainable, in short, upon "circumstances."

If we consider all the possible aspects of any simple instance where a medical practitioner may decide to refuse his services, we shall see at once that cases must of necessity vary infinitely, and that each must be judged by the medical man, as we have suggested above, on its own merits. The law imposes upon him no obligation except to use reasonable care and skill in those matters which he undertakes. Where the law does not intervene his conscience will be his guide, and he must act in accordance with its dictates, having regard to his own honour and that of the profession of which he is a member.

Annotations.

"Ne quid nimis."

SNAKE-ROOT AND SNAKE-STONE.

IT is always interesting to consider the chances of empirical treatment receiving ultimately the consent of rational procedure. In not a few instances, of course, mere empiricism has received scientific endorsement, and that affords us some reason for exhibiting a certain amount of patience when we hear of a remedy for the successful action of which no scientific reason is immediately forthcoming. We are prompted to make these observations in view of a remarkable account which has reached us of the devices of certain snake-charmers in India to elude the poisonous effects of the cobra venom. The story may be familiar to some of our readers, but they will be interested to read it again, and those who have been placed by circumstances in a position to do so may perhaps supply fresh information upon the matter. In an interesting letter we have received from Mrs. Lena Ewart, wife of Captain R. F. Ewart of the Indian Army, stationed at Cawnpore, she states that the snake-charmers there employ two remedies, one of which is snake-root, or bo-boni, and the other a snake-stone derived and employed in ways about to be described. We have received specimens of these which later we shall examine carefully in the laboratory. The root bo-boni has the appearance of dried ginger, but is somewhat darker in colour, and appears, when cut or broken, white inside and inclined to lie in flakes. It is tasteless and is eaten by patients from snake-poisoning in pieces about the size of a pea, the amount taken depending upon the severity of the case. In severe cases, or when swallowing is difficult owing to the clenching of the teeth, it is ground up with peppercorns and some water. The snake-charmers also powder the root and blow it up the nostrils "to prevent the poison rising to the brain and stupefying." The root, according to the snake-charmers, is procured during and just after the rains when the creeper is in full leaf. The mongoose is very fond of the leaves and uses them as its principal diet. Also, a mongoose, if bitten by a snake, will rush off and dig up the root and eat it. Perhaps, adds Mrs. Ewart, the mongoose's diet and instinctive confidence in this root account for its apparent indifference to snakes and also for the fierce way in which it will attack a snake and paralyse and kill it as no other animal can. The snake-charmers use this root also to stupefy the snakes, which, if shut up in an earthenware pot (a gurra) with it, seem torpid and unable to strike. The charmers rely upon this, and invariably put some of the root with a snake in the gurra and shut it up for a bit before attempting to extract the fangs. That, at all events, was the case with the cobras which Mrs. Ewart saw captured. Apparently the root seems to possess, she concludes, the double property of curing a snake-bite and of stupefying the snake itself. With regard to the snake-stone, it is black, and about the size and shape of a broad bean, flat on one side and rounded on the other, and has rather the appearance of a bright and sparkling bit of charcoal. Ordinarily it is fairly hard, but when applied to a snake-bite "it grows soft and visibly swells with the poison it sucks out. ..... It does not fall off in two or three seconds, but stays on a full ten minutes." It then, according to Mrs. Ewart's statement, drops off, generally into milk. "Small bubbles arise from it when in the milk, ... and you can see the poison being discharged into the milk, tinging it slightly either a bluish or greenish colour. ..... After disgorging the poison in the milk it resumes its normal shape and size and hardness again." The stone is applied more than once until the poison is sucked out, a consummation which is supposed to be reached when it no longer adheres to the wound for any appreciable time. The genuine stones are rapid in their action when fresh, but gradually lose power as they are used, and are generally regarded as untrustworthy after from 15 to 20 applications. Such is the belief concerning these stones, which are not stones in the ordinary sense of the word. The manner of obtaining the stone invites criticism, but so far the account given by the snake-charmers as to its origin has not been personally substantiated by Mrs. Ewart. It is obtained, the snake-charmers state, from a certain species of very large yellow frog. It is added that the snake-stone will only draw the poison from the finger to the shoulder, or from the foot to the hip; if the poison has entered the body it is absolutely necessary to take the root as well, in the manner already described. Mrs. Ewart has recorded some cases which came immediately under her observation in which apparently the fatal effects of the cobra-bite were avoided by the timely application of these remedies. We hope to discover something more about them in due course, when we have applied a few chemical tests to the specimens.

CHOLERA CARRIERS.

THE recent discovery that healthy persons who have recovered from enteric fever may harbour the bacillus and convey the disease to others has revealed the origin of many hitherto inexplicable outbreaks. It seems probable that carriers of many other infectious diseases exist though, excepting the well-known case of diphtheria, observations on the subject are lacking. In the *New York Medical Journal* of Jan. 21st Dr. A. J. McLaughlin, of the Public Health and Marine Hospital Service of the United States, has recorded some important observations on

cholera carriers which he made in Manila. He has never known a carrier to harbour the cholera bacillus for longer than 20 days, and he has found that the great majority lose the bacillus in less than 10 days. However, much longer periods have been recorded. The longest, observed by Pfeiffer, is 69 days. When cholera is epidemic bacillus carriers are numerous. Dr. McLaughlin found that from 6 to 7 per cent. of healthy persons living in infected neighbourhoods in Manila were carriers. On the other hand, when cases are few, the so-called sporadic cases, hundreds and even thousands of stools may be examined before the first carrier is found. The fact that a carrier may harbour the cholera bacillus as long as 69 days explains how quarantine may be passed and an apparently inexplicable outbreak of cholera occur. The danger from the cholera carrier depends on his habits and on the sanitary conditions of the community. If he uses a modern flush-closet and keeps his hands clean he is harmless. But if there is no proper system of disposal of excreta and he deposits his stools where they are accessible to flies, or if he does not wash his hands after defæcation and handles food he is a source of danger. The responsibility of carriers for outbreaks of cholera was proved by Dr. McLaughlin in Bilbid Prison. This prison is one of the best managed in the world; its food and water-supply are under the most perfect control. In the annual report for 1906 the occurrence of cholera in the prison was said to be inexplicable, as the drinking-water was sterilised and food was under the most rigid inspection, and any food likely to convey cholera was always cooked. Every incoming prisoner was quarantined for five days. Each year, however, when cholera occurred in Manila and the surrounding provinces, outbreaks were observed in the prison. It seemed to Dr. McLaughlin that the explanation could only be that the disease was introduced by bacillus carriers. The stools of the prisoners concerned in the handling of food and water were examined, as it was not possible to examine the stools of the whole 3000 prisoners. The stools of 17 out of 264 prisoners were found to contain cholera bacilli. Following an order to compel thorough disinfection of the hands upon leaving the latrine and before eating, the outbreak was quickly suppressed. To prevent recurrence the latrines were screened and disinfected, and the stools of incoming prisoners were examined. In spite of the presence of cholera in the surrounding provinces the disease did not reappear in the prison.

CONGENITAL SYPHILIS OF THE HEART.

IT is generally stated that congenital syphilis of the heart is rare. Mracek found only 9 congenital cases in 112 of heart syphilis, and in necropsies of 150 congenital syphilitics only 4 in which the heart was involved were noted. This, however, was in 1893, and the criteria depended on then, and, indeed, until recently were the presence of definite gummata, giant cells, and atheroma of the coronary arteries. Since the discovery of the spirochæta pallida, and the methods of staining it in tissues, new factors have arisen, however, and in the *American Journal of the Medical Sciences* for March Professor Scott Warthin has published his results by the newer methods, based on the microscopic investigation of 12 cases of sudden heart failure. Of these cases only one was stated definitely, ante mortem, to be a congenital syphilitic; 9 occurred in infants and young children, and 3 were adults. Of these three latter all died suddenly; all had a history of heart disease, 1 suffered from infantilism, and 1 was a "blue baby" in infancy and discovered to be the daughter of a tabetic. Macroscopically the hearts showed nothing definite. Those of the infants and young children were dilated, pale, contained lighter areas, and were thickened and hypertrophied, especially in the right ventricle. The older cases were typical of mitral incompetence. No gummata were found in any of the cases, nor were giant cells, signs of caseation, or the formation of new blood-vessels noted, yet all were syphilitic. The common feature of each case was "the occurrence throughout the myocardium of numerous lightly staining patches (hæmatoxylin, eosin, van Gieson), separating or replacing muscle fibre, made up of a fibroblastic or myxomatous tissue in which lay numerous plasma and large epithelioid cells." These areas were not restricted to any one part of the heart; they might be diffuse or confined largely, as in the new-born, to the right ventricle. The areas were seldom large enough to be recognised by the naked eye, and appeared to develop along the course of the smaller arteries, arising probably from their walls or perivascular tissue. Arterial thickening was frequent but not markedly so; obliterative endarteritis was not common. The definite syphilitic nature of the condition was shown by the enormous amount of spirochætes found on staining the sections by Levaditi. No gummata were found as in the case of adults seen in the later stages of acquired syphilis. Of the other organs, the liver and spleen most frequently showed signs of congenital syphilis, and the frequency of hyaline glomerular scars in the kidneys was suggestive. The conclusions arrived at are that gumma of the heart in congenital syphilis is rare, but that congenital syphilis of the heart in the form of local or diffuse interstitial myocarditis is probably not at all rare. The new criterion is the demonstration of the spirochæta pallida in the proliferating interstitial tissue of the heart wall; and statistics based on the presence of gummata and coronary endarteritis are therefore quite inadequate.

MORGAN TUD.

PERHAPS the earliest of British physicians in point of time was Morgan Tud. He was the legendary physician of King Arthur, and is mentioned as such in the tale of "Geraint, the Son of Erbin," in the Welsh "Mabinogion," the classic series of ancient Celtic stories, well known in Lady Charlotte Guest's translation to lovers of literature and folk-lore. King Arthur is a creature of myth, but Morgan Tud, from the mere fact that his name is recorded, may very well have been an actual personage at any time long prior to the fourteenth century, when the "Mabinogion" were put into literary form. That the ancient Welsh had among them a hereditary order of physicians is not disputed, and the fact is adverted to in the late Dr. Payne's Fitz-Patrick lecture on Medicine among the Anglo-Saxons. The Welsh bards and Druids have always maintained a tradition of medical knowledge; their modern representatives apparently still vaguely maintain it. What that tradition amounts to can only be known to the initiated, but we can make a shrewd guess at the nature of bardic medicine by closely attending to the scant mentions of Morgan Tud which occur in the story of Geraint. When Edeyrn, the son of Nudd, had been grievously wounded by Geraint, "Arthur caused Morgan Tud to be called to him. He was the chief physician. 'Take with thee Edeyrn the son of Nudd, and cause a chamber to be prepared for him, and let him have the aid of medicine as thou wouldest do unto myself if I were wounded, and let none into his chamber to molest him, but thyself and thy disciples, to administer to him remedies.' 'I will do so, gladly, Lord,' said Morgan Tud." Later, when Geraint himself in his many wanderings had received grievous wounds the magnanimous Arthur ordered a tent to be pitched for him and the physicians, and he enjoined him to be provided "with

abundance of all that might be requisite for him." Then again Morgan Tud and his disciples were brought to Geraint, and apparently stayed with their patient till he was healed. "And when he was fully recovered, Geraint came to Arthur, and asked his permission to depart. 'I know not if thou art quite well.' 'In truth I am, Lord,' said Geraint. 'I shall not believe thee concerning that, but the physicians that were with thee.' So Arthur caused the physicians to be summoned to him, and asked them if it were true. 'It is true,' said Morgan Tud." All honour to the dim legendary physician, or rather military surgeon, who thus tersely recorded one of the earliest of medical opinions in the Isle of Britain! Though we hear nothing about his practice or his medicines, we are at liberty to conclude from these two brief mentions that Morgan Tud was sage and merciful, and even in remote pre-Saxon times represented an honourable tradition.

THE EMPIRICAL TREATMENT OF CANCER.

THE paper by Professor A. S. Grünbaum and Dr. Helen Grünbaum, which we publish in another column, illustrates one aspect of the very varied attempts that are being made to solve the riddle of the treatment of cancer by aid of the methods which the application of experiment has made possible. The writers cautiously and rightly suggest merely the possibilities of an empirical application of their results to treatment in man; their observations should not therefore, however, be undervalued, for if experimental cancer research has brought home to the pathological mind one fact more worthy of emphasising than another it is the demonstration of the reality of the natural cure of cancer. This has been shown to be of frequent occurrence in transplanted cancer under given conditions, and its occurrence in the natural course of the disease in animals has also been placed beyond all doubt. At the same time, there has been revealed how delicate are the circumstances determining a progressive advance or a natural cure of the disease, and how varied are the agencies which appear able to give a final kick to the cancer cell when its continued existence and growth have become precarious.

A SUPERNUMERARY KIDNEY RECOGNISED DURING LIFE.

OF all the congenital anomalies of the kidneys the rarest is the presence of a third kidney, and in medical literature there are comparatively few records of its occurrence, and for the most part the abnormality has been recognised in the dissecting-room or at a necropsy. In only five cases has the condition been recognised during life, and to these another has been added by Dr. Ange Isiya of Rome. The case, which he records in the February number of *Annales des Maladies des Organes Génito-Urinaires*, was an unmarried woman 27 years of age. From the age of six years she had suffered from attacks of pain in the right lumbar region, radiating downwards towards the pelvis. These attacks occurred at intervals of about two years and were always accompanied with bilious vomiting. She had never had any trouble with micturition. The last attack took place one and a half years before she was seen by a medical man. The medical man whom she consulted seven months before coming to Dr. Isiya had discovered an abdominal swelling situated in the hypogastrium. The swelling was easily moved and gave rise to no pain. Although the swelling did not increase in size the patient complained of a sense of weight and pain in the abdomen, made worse by meals and exertion. She suffered from extremely troublesome constipation. When examined the swelling was felt to be hard, elastic, and irregular in form; it was painless on pressure. When the colon was distended with air, it definitely passed in front of the swelling. Examination of the lumbar region showed nothing abnormal. The diagnosis made was that the swelling was probably a benign tumour of the mesentery. The abdomen was opened to the outer side of the right rectus and a supernumerary kidney was recognised situated to the right of the vertebral column. It was of the size of an egg, and possessed blood-vessels and its own ureter, which after a course of about two inches entered the ureter of the right kidney. The transverse colon was much prolapsed, and Dr. Isiya replaced it in its normal position. Both the right and the left kidney were present. The patient recovered and has remained well since. Dr. Isiya discusses the methods of diagnosis and the mode of formation of a third kidney. A useful bibliography of the literature of the subject is given.

ALIENS AND PISTOLS.

WITH a Bill introduced by a private Member in the House of Commons in the hope of regulating further the entry of aliens into this country we do not quarrel, but we are inclined to protest against legislation in respect of the carrying of pistols by foreigners which would suggest the according of privileges in this respect dependent upon nationality. As we have frequently pointed out, all carrying of pistols in public places is dangerous, and so is the possession of them (although this cannot always be prevented) except by persons of proved good character. There can be no reason for imposing conditions upon a foreigner to restrain him from doing that which it is believed he ought not to do if he can evade them at any time by the not over-difficult process of obtaining naturalisation. Half a dozen aliens during recent years have committed desperate and reckless murders which have attracted considerable notice, but almost daily cases may be read of in the newspapers in which lives have been sacrificed or endangered by crimes or by avoidable accidents in which pistols have figured. We doubt if the percentage of these is higher in the alien than in the native population inhabiting these islands. To take two typical instances recorded about the time when prominence was being given to Mr. Goulding's Bill in the newspapers. In the one a man was charged at Islington with shooting an acquaintance outside a public-house, owing to an alleged quarrel about the wife of one of them. This case was remanded in consequence of the condition of the wounded man, and the magistrate observed that the prisoner's condition of mind should be inquired into. In the other case referred to, a prisoner, stated to be a foreigner and bearing the name of Sambucci, was sentenced to a month's hard labour at Brighton for presenting a loaded pistol at a policeman who was arresting him for being drunk and disorderly. Sambucci is stated to have resided in Brighton for 30 years, and if he was not naturalised during that time we have no doubt he could easily have become so. We regard the question whether Sambucci was or was not a foreigner as irrelevant, and we are indifferent as to the nationality of the other person mentioned, who has not been tried, and consequently may be innocent of any offence. We care nothing for the nature of the alleged quarrel in the one instance, and in the other we sympathise with the policeman who, in the execution of his duty, was confronted with a loaded firearm. Our point is that in these two instances, which are typical of hundreds of others, pistols have been used to endanger human life, and that it has been not only possible but perfectly easy to obtain the weapons. They may have been bought in both cases under the sanction of a gun licence, which would add a few shillings to their cost, or even that trifling expense may have been avoided.

We submit that firearms of this class should be sufficiently heavily taxed, and the conditions of their acquisition rendered sufficiently onerous to confine the sale of them to dealers of the better class, and that their lawful use should be restricted to "home defence." Possession of them without previous compliance with prescribed formalities, or carrying them on the person in public places, should be capable of being treated as a serious offence.

DERMATITIS FROM TEAK.

WE publish this week a brief account, in the form of a letter, of a case of dermatitis from teak. The dermatitis which follows working with teak has received very little recognition. Many of the text-books of dermatology do not mention it, though we must except the work by Dr. Norman Walker, which does refer to it. In THE LANCET of April 25th, 1896 (p. 1193), a writer with 30 years' experience of working with teak wood had never heard of any eruption caused by teak, though another correspondent had seen sores produced by splinters of teak. In the *British Journal of Dermatology*, 1905 (p. 447), Mr. Willmott Evans recorded a case very similar to that published above, and he brought forward some evidence which suggested that it is only the harder heart-wood of the teak tree which is capable of giving rise to an eruption. The heart-wood is especially used for steps because of its greater hardness, and he was inclined to believe that the dermatitis was due to the oil which is especially plentiful in the heart-wood, while there is hardly any oil in the outer layers of the wood. It is worthy of note that the white ant, which is so destructive of all woods, however hard they may be, is never known to attack the heart-wood of the teak except just at its most superficial parts. It seems to be clear that teak can give rise to a severe dermatitis, and this dermatitis is probably caused by the teak oil, which mainly resides in the heart-wood. Undoubtedly idiosyncrasy plays a part in the production of the disease, for only certain workmen suffer from it, though in some instances those affected may form a majority of those working with the wood. As our correspondent points out, this dermatitis may have an important medico-legal bearing from the point of view of compensation. Inasmuch as idiosyncrasy has a serious share in the causation of teak dermatitis, it would undoubtedly be argued in any legal proceedings that idiosyncrasy is mainly responsible for it, and so far as we are aware there has been up to the present no decision as to the value to be set on idiosyncrasy in apportioning responsibility in the production of diseases arising in the course of occupation.

TRANSVAAL GOVERNMENT LABORATORIES.

WE have received the report for 1908–09 on chemical examinations conducted in the official laboratories at Johannesburg. Of the foodstuffs analysed, 18 per cent. were condemned as unfit for consumption, indicating the need for an extended and efficient control and the strict enforcement of municipal by-laws. Mr. J. M'Crae, the Government analyst, is convinced that much of the canned foodstuffs on the market is wholly unfit for consumption and that legislation is urgently required. He alludes to the currency of the opinion that spirits, especially whiskies, as generally manufactured at the present time, are in themselves spurious and unwholesome; he considers this to be quite untrue. The whisky sold is not an all-malt whisky, but a blend of malt whisky with patent still spirit; but his own experience, as well as that of the Canadian Inland Revenue Department Laboratory at Quebec, and similar findings in Australia, all tend to support the opinion of the recent Royal Commission that any special evil effects observed are to be attributed to excess in quantity consumed rather than to any specially deleterious substance contained in the whisky. Mr. M'Crae regrets that no proper survey of drinking water-supplies has been started; only at Johannesburg and Pretoria are control examinations systematically carried out. With the rapid development of this flourishing province that is now taking place the establishment of such a systematic survey appears to be a matter of urgent importance in the interests of the public health.

FADING OF MICROSCOPICAL PREPARATIONS.

WITH the introduction of aniline dyes in histological work the utility of staining methods for the differentiation of tissues and for diagnosis was greatly increased. This advantage had, however, to be paid for in the comparative instability of the preparations. There are few pathologists who have not been grieved to see the gradual fading into invisibility of specimens which at first seemed almost perfect, and which were most useful for teaching and demonstration purposes or valuable as a record of a rare condition. All who have experiences of this nature will be interested in the paper by Dr. A. C. Coles, which appears in another column of our present issue, recording his investigations into the cause of this want of permanence and his proposed remedy. It may seem astonishing that this matter, important to so many, has not been settled by histologists long ago, but the modern microscopist frequently lacks that perfection in the art of microscopy which was attained by the older and more leisured workers. He regards his microscope as a means for diagnosis, and often uses ephemeral preparations which are thrown away in numbers when they have served their instant purpose, and he is therefore prepared to sacrifice permanence for immediate utility. All the authorities consulted by the author of the paper agree that the prime cause of the fading is found in the acidity of the mounting medium, generally xylol balsam, though dammar lac and cedar oil have been also used in the hope of avoiding this difficulty. These mounting media can all be prepared in a neutral condition, but, as stated by Dr. Coles, all substances of the nature of balsams, oleo-resins, or cedar oil will sooner or later oxidise and become acid and so cause fading. The remedy suggested is the use of pure paraffin or parolein as a mounting medium. There is no doubt that this medium is optically good, but it is more trouble to use since the preparations require to be "ringed" with cement. At present sufficient time has not elapsed to make it quite certain that the specimens so mounted are truly permanent, but no change has been noted in his preparations. Numbers of microscopic preparations are now never mounted at all, but examined in the drop of cedar oil of the immersion lens. For this purpose, as Dr. Coles points out, parolein cannot be employed as a substitute without impairing the optical performance of the lens. The method suggested by Dr. Coles should be welcome to histologists and deserves an extensive trial.

THE ETIOLOGY OF CIRRHOSIS OF THE LIVER.

Lieutenant-Colonel Leonard Rogers, I.M.S., read an interesting paper on Cirrhosis of the Liver, at a recent meeting of the Asiatic Society of Bengal. From his gleanings into the post-mortem records of the Calcutta hospitals he finds that common as are such cases now, they were nearly twice as frequent some 30 years ago. In India excessive alcohol cannot be considered as the most common cause of it, for in Lahore Major D. W. Sutherland, I.M.S., has found the disease to be quite common in very strict Mahomedans of the Punjab who never take alcohol on

account of their religious laws. Thus there is need for further inquiry into the etiological factor. Gordon Tucker in Bombay has pointed out the existence of a "malarial cirrhosis." Kala-azar cases not infrequently terminate with ascites and cirrhosis of the liver. Lieutenant-Colonel Rogers points out that the cases described by Gordon Tucker in Bombay, and Duprez in Trinidad, as malarial cirrhosis were cases which were identical in their clinical appearance with kala-azar. Again, where kala-azar is unknown in the Western States of America and malaria is common, Professor Osler never saw in 15 years at the Johns Hopkins Hospital cases of malarial cirrhosis, and it is inconceivable that malaria should produce cirrhosis only in countries where kala-azar exists. Therefore Lieutenant-Colonel Rogers concludes that it has yet to be proved that the malarial infection alone is a producing cause of cirrhosis. The infrequency of syphilitic cirrhosis is ascribed to the inefficient treatment by quacks leading to early death from syphilis. The incidence of the disease shows 13·1 per cent. among Mahomedans and 21·8 per cent. among Hindus, and this is related to the relative absention of the former sect. But the difference is not so marked as it should be, and so another cause must be sought for. Tropical abscess of the liver has also a low incidence among Mahomedans, but alcohol is only a predisposing cause in tropical abscess, for it never produces suppuration in countries where amœbic dysentery is absent. Therefore alcohol is more likely a predisposing factor only in cirrhosis. This predisposing influence is supported by the relative excess of cases among Hindu males, who enjoy opportunities for indulgence which are absent in the case of their carefully guarded females. In Calcutta cirrhosis of the liver is so frequently associated with chronic dysentery, usually of the amœbic type, as to suggest that the fibrosis of the liver is secondary to the bowel ulceration.

SURGICAL RESECTION OF POSTERIOR SPINAL ROOTS.

Dr. Robert Abbé of New York has published an interesting account in the *New York Medical Record* of March 4th of his experiences with the operation which has become associated with the names of Förster and Kuttner. What is of particular interest is the championship of Dr. C. L. Dana's claim to priority in devising this operation. It appears that Dr. Dana wrote in September, 1888, to Dr. Abbé, suggesting resection of the posterior spinal roots for relief of violent neuralgic pain with muscular spasm in the right arm of a man who had already undergone nerve-stretching and amputation through the upper arm but without relief. The operation was performed in December, 1888, and fully reported in February, 1889. In April, 1889, Sir William Bennett (see THE LANCET, April 27th, 1889) gave an account of a similar operation performed at the suggestion of Sir Victor Horsley for analogous pains in the leg, a week before the operation in New York. Dr. Abbé has carried out the same procedure for five patients, three of whom (including the original one) were under observation for some years after. He is in favour of a hemilaminectomy to expose the roots, as by this means the cord retains the protection of the spinous processes and the laminæ of the side away from the field of operation. He considers, also, that it is unnecessary to sever each root entirely, since hemisection of each root of the plexus supplying the offending limb is sufficient to secure as much relief of the pain as is available by this method. In four of his cases the indication for operation was pain; in one of these athetoid movements in the painful limb, consequent on infantile hemiplegia, were also a source of annoyance, and amputation after unsuccessful nerve-stretching had been performed, but without relief of the pain. In the fifth case operation was undertaken to relieve painful spastic movements of the arm in a hemiplegic woman. In this case considerable relief was afforded, both in regard to pain and spasticity, and the resulting anæsthesia was incomplete as the posterior roots of the nerves had been only half cut through. In one of the other cases, a case of sarcoma of the axilla, immediate relief from previous incessant pain was afforded, which lasted until the patient died from this disease several months later. In the other cases the results do not seem to have been so happy, though Dr. Abbé claims that the pains were materially lessened.

THE annual meeting of King Edward's Hospital Fund for London was held at St. James's Palace on Tuesday, March 28th, the Duke of Teck presiding. The report of the General Council for the year 1910 and the accounts were received, as well as an important report of the Distribution Committee upon the question of the suspended grant to St. George's Hospital. The recommendation of the Distribution Committee was adopted that the school of St. George's Hospital should refund to the hospital in respect of the year 1909 (and if necessary 1910) the difference between £1000 and the charge borne by the hospital in respect of specific work done for the patients, which amounted in 1909 to £1875. We are publishing the whole report next week.

THE honorary secretaries of the Society of Infant Consultations (11, Leonard-place, Kensington, London, W.) ask us to announce that they are extremely grateful for the information which they have received from medical officers of health in various parts of the country. They are anxious, however, to make the list a complete one, and therefore beg to remind those who have not yet sent their communications that their replies will add greatly to the value of those which have already been received.

Dr. P. C. E. Tribe, honorary physician to the Anglo-American Hospital at Cairo, has received the King's licence and authority to accept and wear the Imperial Ottoman Order of the Medjidieh of the Third Class which has been conferred upon him by the Khedive of Egypt.

A Local Government Order will come into force on May 1st providing for the notification of tuberculosis among hospital patients.

NEW Regulations under the Poisons and Pharmacy Act have been issued, by which retailers of sulphuric acid, nitric acid, hydrochloric acid, and soluble salts of oxalic acid are liable to a penalty of £5 unless such acids are sold in vessels distinguishable by touch from ordinary vessels and distinctly labelled "Not to be taken."

THIRD INTERNATIONAL HOUSING CONGRESS, DRESDEN.—This congress will take place in Dresden from Oct. 2nd to 7th, 1911. It will be divided into nine sections, which will embrace four groups. Group A comprises Sections I. to IV., Group B Sections V. and VI., Group C Sections VII. and VIII., and Group D Section IX. Section I. relates to building generally, including municipal and garden cities; Section II. to the details of compartments, material, floors, roofs, stairs, &c.; Section III. relates to heating, lighting, and ventilation; Section IV. to cleaning, refuse removal, and disinfection; Section V. relates to town building and Section VI. to country building; Section VII. relates to building of schools, prisons, hotels, hospitals, bathing establishments, churches, theatres, &c.; while Section VIII. relates to factories and railway stations, ships, wagons, &c.; and Section IX. relates to the laws, administration, and statistics. The official languages of the Congress are German, English, and French. Further particulars may be obtained from the general secretary, Dr. Hopf, Reichsstrasse, 4, II., Dresden.

MEDICINE IN THE ENCYCLOPÆDIA BRITANNICA.

V.[1]—HEROES OF MEDICINE.—HOMŒOPATHY.—HOSPITAL.

THE biographies of medical men in the new edition of the Encyclopædia Britannica are somewhat limited in number, and we can but mention some of those that there are. To begin with the quasi-mythical Æsculapius, the little that is known about him is given in a short unsigned article at p. 276 of Vol. I. Short as the article is, the reader is given all the points about which he may be likely to be in doubt, and the references at the end of the paragraph afford opportunities for further research if such is wished for. Averrhoes, as might be expected in a work not dealing solely with medicine, is treated rather as philosopher than as physician, but Avicenna is fully dealt with.

Some Famous Leaders.

The article on Galen is unsigned, and is by no means complete, but the details of his life and work are, it is said, to be found in the section dealing with the history of medicine, which has not yet appeared. Possibly this accounts for the omission of any mention of the commentary of Haly ben Rhodoan, by which Galen was known in the Middle Ages through the medium of a Latin translation from the Arabic. Of Celsus there is no mention, neither does the name of Gilbertus Anglicus appear. But it may be expected that the names of both these physicians, together with that of Gaddesden, the first English court physician, will be dealt with in the section containing the history of medicine. The account of Hippocrates has been already alluded to in our article on the section of Anatomy, published in THE LANCET of Feb. 25th.

Three of the greatest names in the history of British medicine are those of William Harvey and the two Hunters, William and his brother John, for to their discoveries in physiology, anatomy, and pathology respectively it may almost be said that the first real advances in medical science since the days of Galen were due. The articles dealing with these three great men are models of scientific biographies, clear, complete, and eminently readable. That on Harvey is contributed by Dr. P. H. Pye-Smith, who gives an excellent account of Harvey's career and of his great work on the circulation. Harvey's views on the movements of the heart and blood were first put forward in a series of lectures delivered as Lumleian lecturer in 1616, but the publication of the "Exercitatio" did not take place until 1628. His own colleagues were convinced of the truth of his theory, but in foreign countries, as might be expected, the novelty met with disbelief and occasionally with active opposition, although the opposition as a rule was of a feeble and pretentious nature. Great minds, however, accepted Harvey's discovery, and among these the most eminent was Descartes. Dr. Pye-Smith gives due credit to Servetus for his views upon the pulmonary circulation. Harvey's only other important work, that on generation, was published in 1651. Little is known of Harvey as a practising physician, but Dr. Pye-Smith quotes an amusing passage from Aubrey to show that his prescriptions were not held in much esteem by contemporary apothecaries. Apothecaries in those days used to collect physicians' prescriptions and sell or use them to their own profit. "But," says Aubrey, "I knew several practitioners that would not have given threepence for one of his bills"; and, "a man could hardly tell by his bill what he did aim at." It is to be hoped that this was due, not to any inadequacy in the prescriptions, but to their being of a simpler nature than was the usual custom of the time. The appended bibliography of Harvey's own writings and of literature concerning him, though naturally the latter section does not pretend to be complete, is of great value, but we think that among the Harveian orations which Dr. Pye-Smith mentions the admirable one by the late Dr. J. F. Payne, entitled "Galen and Harvey," should have been included.

The biographies of John Hunter and of his elder brother William form a valuable chronicle of the lives of these two illustrious workers. William Hunter, owing to the overshadowing fame of his brother, is, perhaps, not remembered so vividly as he should be, for his work in anatomy, and especially that upon the anatomy of the gravid uterus, was of the greatest value. The memory of John, on the other hand, is kept green before the eyes of all men by the museum called after his name and by the yearly oration, an admirable example of which, delivered by Mr. Edmund Owen, was published in our issue of Feb. 18th last. The biography now before us, from the pen of Mr. F. H. Butler, gives an admirable account of the life and works of Hunter, of his industry, his method of testing hypotheses by experiment, his many-sidedness, and his great discovery of tying a main artery in its continuity. Of his passion for work an amusing hint is given in one of his letters to Jenner, who had written to Hunter bewailing a disappointment in love; Hunter replied, "Let her go, never mind her. I shall employ you with hedgehogs." He was at the time making researches into the phenomena of hibernation, and evidently considered that if anything could mend a broken heart the study of the hibernating hedgehog would be the best prescription.

Sir William Thiselton Dyer gives an excellent sketch of Huxley, although it deals mainly with the pugnacious and controversial side of his character. No one unacquainted with Huxley's private life would gather from this article what a tender humorous side there was to the character of a man only known in public as one who never spared an opponent when the opponent was in the wrong. But as a picture of the biologist and the expert upon education the article is as clear cut as Huxley's own writings.

Homœopathy.

The article on Homœopathy is a most fairly written and judicial presentment of the case for Hahnemann. It contains information much of which will, we think, be new to many readers. For instance, the Latin motto upon which Hahnemann based his system is now allowed to be not *Similia similibus curantur*, but *Similia similibus curentur*, the use of the subjunctive mood making the statement far less positive than the use of the indicative. As regards the law of similars the writer of the article quotes an interesting excerpt from Paracelsus, showing that the Latin motto given above was used as a marginal note in the Geneva edition of his works published in 1658. The marginal note may have been editorial, but it is certain that Paracelsus himself said: "*Nec enim ullus unquam morbus calidus per frigida sanatus fuit, nec frigidus per calida ..... Simile autem suum simile frequenter curavit .....*" Hahnemann does not mention this passage in the list which he gives of authors who preceded him in the doctrine of similars. The Hahnemannian posology, we learn, has nothing to do with the original law of cure, but was a later creation of Hahnemann's mind. It is not surprising that "the question of dose has also divided the members of the homœopathic school into bitter factions, and is therefore a matter for careful consideration. Many employ low potencies, i.e., 'mother tinctures,' first, second, sixth dilutions, etc., while others use hundredth, thousandth, and millionth." Hahnemann's idea was that the higher the potency—i.e., the more intimately the drug was subdivided—the more subtle and powerful was the curative action, for continual division developed a spiritual and curative agency. He argued that if mercury were triturated for a long time it became more and more powerful. Moreover, modern research has shown that metals in a very fine state of division (the colloidal state), the so-called metallic ferments, have an action both different from, and more powerful than, that which is produced when they are used in an ordinary form. Erroneous as are the arguments of homœopathists in many ways, homœopathy may be allowed, the author would show, to have done good service in the past. To quote his words, "Hahnemann undoubtedly deserves the credit of being the first to break decidedly with the old school of medical practice, in which, forgetful of the teachings of Hippocrates, nature was either overlooked or rudely opposed by wrong and ungentle measures." No one who considers the state of orthodox treatment at the end of the eighteenth century will deny this.

Hospital.

The article Hospital is contributed by Sir Henry Burdett. The matter which it contains is good, but it almost entirely ignores many of the facts upon which, it seems to us,

[1] Articles I., II., III., and IV. were published in THE LANCET of Feb. 25th (p. 530), and March 4th (p. 609), 11th (p. 692), and 25th (p. 828), 1911, respectively.

the ordinary man would desire information were he to look up the subject "Hospital" in any book of reference. It commences with a short and difficult, because concentrated, account of the origin of hospitals, and then proceeds to discuss at length the relative merits of voluntary and rate-supported establishments, together with those of Poor-law infirmaries. A classification of various hospitals is next supplied, and Sir Henry Burdett gives a sound account of the evolution of the modern hospital, dealt with purely from the structural point of view. The next section is concerned with the idea of a hospital city: "Why should we not have, on a carefully selected site well away from the contaminations of the town, and adequately provided with every requisite demanded from the site of the most perfect modern hospital which the mind of man can conceive, a 'Hospital City'? ..... To meet the urgent and accident cases a few receiving houses, or outpost relief stations, with a couple of wards, would be situated in various quarters of the working city, where patients could be temporarily treated, and whence they could be removed to the 'Hospital City' by an efficient motor ambulance service." Sir Henry Burdett surmises that probably the United States will be the country where this idea will be first realised, and he thinks that it will one day solve the more difficult of the problems involved in providing adequately for the sick in crowded communities. We agree that the hospital city might solve a number of business and administrative problems, but would its establishment be better for the majority of patients? We doubt it. Sir Henry Burdett then considers the question of hospital administration and construction, including hospital economics, with an account of the "Uniform System of Accounts." The section on construction is interesting and well written. But where we join issue with the whole article is, that it is written almost entirely from the point of view of one who appears to regard a hospital as a part of modern economics. Administration and business-like methods are certainly necessary for a hospital, but the prime reason for the existence of such a building is the needs of the sick, and a hospital is, both in fact and in the general ideas of the public, a place where sick and wounded people are treated. We expected when we saw the heading "Hospital" to find some account of the inner working of a hospital, and we feel reasonably certain that the ordinary reader would do so also. An inquirer who looked up "Monastery," or "College," or "Cotton Mill" in any book of reference would, we think, be dissatisfied if he found only an account of the structure, of the way in which accounts were kept, or of the influence which was exerted on poor relief, of the results of Parliamentary Commissions, or of the effect on school attendance of half-timers. He would seek for some account of the lives and doings of those who lived and worked in the various establishments. Hospital methods change, and medical and surgical treatments change also, but the broad facts of how a hospital works are fairly constant, and some portion of the article might well have been devoted to an account of the working of a hospital and to the routine which a typical patient both on the surgical and the medical side would undergo, for on these matters the public is regrettably ignorant.

THE REGISTRAR-GENERAL'S ANNUAL REPORT FOR 1909.

II.[1]

Fertility of English Mothers.

IN several of the recent reports the decline of the English birth-rate has been seriously commented on by the Registrar-General. With the aid of a diagram in the present report we learn that the decline still continues, and, further, that within the last 30 years there has been a fall in the crude rate of births equal to 27½ per cent. Based on the proportion of births to the number of possible mothers (i.e., the number of women living at child-bearing ages) the fall amounted to 33 per cent., while the fertility of married women, based on the ratio of legitimate births to wives of conceptive ages, showed a decrease of 29 per cent. Stated in another way, it follows that if the fertility of married women, in proportion to their number, had been as high in the year under notice as in 1876–80, the legitimate births would have numbered 1,240,649 instead of the 876,953 actually recorded, and the legitimate birth-rate would have been 34·70, or 10·18 in excess of the recorded rate. In Dr. Stevenson's opinion the effect of decrease in fertility of married women—due in some measure probably to their greater average age, but largely, no doubt, to deliberate restriction of child-bearing—is masked to some extent by the net result of the changes in the constitution of the population; so that these cannot be appealed to as helping to explain the fall in the birth-rate. It is at least probable that while the age constitution of the population in 1909 has been assumed to be the same as at the 1901 census, the increase in proportion of wives at conceptive ages which had occurred between 1876–80 and 1901 has continued since that date. If this be so, the effect of diminished fertility will be masked in the recorded birth-rates to a somewhat greater extent than has been indicated in this report. From a table in which the fertility of married women has been calculated for several continental and foreign countries, the significant fact appears that in the triennial period 1900–02 the fertility of English wives was lower than that recorded in any other European country except France.

To every 1000 married women, aged 15–45 years, estimated to be living in England and Wales, 209·4 living children were born in the year under notice. By an elaborate calculation it is shown that the fertility of married women living in the country districts of England is greater by about 7 per cent. than that of women residing in the large towns; and if the age constitution of the two areas were identical the difference in fertility would be still more strongly marked. But the rural districts are at a disadvantage in this respect, because the proportion of young married women in the rural districts is considerably below that in the towns owing to the well-known migration of young persons from rural to industrial areas.

Mortality in England and Wales.

The lowest mortality ever recorded in this country was that of 1909, when the rate did not exceed 14·5 per 1000 of the estimated population. Favourable meteorological conditions, especially the very cool summer, probably contributed to this fortunate result. During the nine years of the current century the death-rate fell, with slight fluctuations, from 16·9 per 1000 in 1901 to 14·5 per 1000 in the year now under notice. In each of six of these years the rate was the lowest up to date. This record accords with the general experience of European countries.

Reviewing the mortality statistics of England since the inauguration of death registration in 1838, we find that after correction for variations of sex and age constitution, the annual rate of mortality reached its highest point in 1846–50, when it stood at 22·4 per 1000 of the population. From that period it fell intermittently to 18·5 in 1891–95; since which latter date the fall has been steadier and more rapid. The total decline since recorded is about equal to that taking place during the previous 45 years. In the year under notice the death-rate was only 65 per cent. of that recorded in the later "forties." The passing of the Public Health Act in 1875 was followed by a marked decline of the death-rate in the two next succeeding quinquennia. And although this improvement was temporarily arrested in the two following quinquennia it has been renewed with increased vigour from the period 1896–1900 onwards.

Mortality at Different Ages.

With regard to the stages of life at which the fall in the English death-rate has been most conspicuous, we note that the mortality among boys aged 5–10 and among girls aged 15–20 years is at the present time less than one-third of what it was 70 years ago. It is interesting to observe that the mortality of children under 5 years of age, which during the nineteenth century had declined less than at any other of the early age groups, has declined more than that of any other age-group during the first nine years of the current century. On the other hand, it must be mentioned that, according to the records, the mortality of men above 55 and of women above 65 years of age has actually increased in recent years. Among the twelve age-periods into which it is customary to divide the span of life, there are only six for males and only two for females which do not show a more rapid fall in mortality during the current decade than in any previous one.

Comparison of English and Foreign Mortality Statistics.

In the annual reports of the Registrar-General since the

[1] No. I. was published in THE LANCET of March 25th, 1911, p. 827.

beginning of the new century a useful feature has been the endeavour to extend the area of observation to countries outside the British Isles. Consequently, it is now practicable to compare our own statistics of mortality, as well as of natality, with those of other parts of the empire, and, indeed, with those of foreign European States. From a table in this report we gather that during the present century all the principal countries of Europe have experienced lower death rates than any which were ever recorded for them before. In the case of the Netherlands this has happened in no less than six out of the nine years; Austria, Belgium, and Spain have had five "lowest rates on record" since 1900; Denmark, Norway, Prussia, and Switzerland four; Italy three; and France, Hungary, Russia, Scotland, and Sweden two each. The countries showing the greatest decline are Spain and the Netherlands, while France shows the least. The lowest death-rate recorded for Ireland was that of the year 1896.

Infantile Mortality.

In the year under notice the rate of mortality among infants under one year of age was the lowest on record; it was equal to 109 per 1000 births and was below the average in the previous decennium by 21 per cent. It is worthy of remark that the reduction in infant mortality from all causes has been fairly steady since 1899; although, if the deaths from diarrhœa be disregarded, the decline was very slight up to 1904. Since that year, however, the improvement has been very remarkable. Never before has public effort been so prudently or so generally directed to the protection of infant life, and it is reasonable to attribute to such effort the reduction now manifest in the mortality of that portion of the population. In each part of the first year of life the mortality was the lowest on record. Compared with the average in the previous quinquennium, the mortality in the first three months was lower by 10 per cent.; in the second three months it was lower by 24 per cent.; whilst in the last six months it was lower by 20 per cent. Very remarkable is the fall in the mortality in the second trimester; it is now little more than half of what it was ten years ago. The mortality of infants is generally much greater in the urban than in the rural areas. In the year 1909 it was equal to 118 per 1000 in the town and to 94 per 1000 in the country. It would seem that at birth the urban infant is almost or quite as healthy as the rural, but that the adverse post-natal influences of town life soon diminish its relative chances of survival. For the first month of life, in which over one-third of the total infantile mortality occurs, the urban excess is less than 4 per cent., but in subsequent months urban mortality shows a considerable excess, which increases with advancing age.

Causes of Decline in English Mortality.

As in several recent years, the main factor in the reduction of the general death-rate of 1909 was the exceedingly low mortality of children under the age of five years. The mortality from tuberculosis, enteric fever, diphtheria (with croup), and diarrhœa was in each case lower than in any previous year. On the other hand, measles, pneumonia, and cancer caused increased mortality; the latter disease showing once more the highest death-rate on record. The principal contribution to the general decrease of mortality comes under the head of bronchitis; but this is due, in Dr. Stevenson's opinion, to transfer of deaths to pneumonia, under which heading is recorded the only large increase except that due to cancer. The most noteworthy diminution of mortality is recorded in the case of those diseases against which the efforts of sanitarians have chiefly been directed—namely, tuberculous, phthisis, diarrhœal diseases, scarlet fever, and enteric fever.

LITERARY INTELLIGENCE.—Mr. Edward Stanford announces for immediate publication "Stanford's Indexed Atlas of the County of London," the issue of which will be rendered particularly opportune this year by the Coronation. The atlas consists of a series of map sections printed in colours, with a full index of upwards of 12,000 names and a preface by Sir Laurence Gomme. The scale of the map, which extends to the utmost limits of the county and includes part of the adjoining country, is four inches to a mile, and the size of the book, closed, 6½ by 10 in. Two special maps of the county are given dealing with orography and surface geology.

THE METROPOLITAN HOSPITAL SUNDAY FUND.

A LARGELY attended meeting of the Council of the Metropolitan Hospital Sunday Fund was held at the Mansion House on March 28th to consider a recommendation of the General Purposes Committee in the matter of Sunday cinematograph shows managed by certain hospitals (*vide* THE LANCET, March 18th, p. 761). The LORD MAYOR presided.

Archdeacon SINCLAIR proposed the following resolution:—

That the Council has fully considered the recommendations of the General Purposes Committee on the subject of Sunday cinematograph entertainments run by hospitals, as well as the proposal of certain places of worship to ear-mark their collections for hospitals which do not participate in the proceeds of such shows, and, while not expressing any opinion upon the expediency or otherwise of Sunday entertainments, resolves that in the event of the collections for the Fund suffering any diminution which may be fairly attributable to this action of certain hospitals, it shall be a recommendation to the Committee of Distribution to take the same into consideration when making their awards for the year.

Sir A. PEARCE GOULD seconded the resolution, and after a long discussion, in which Sir HENRY BURDETT, Rev. C. H. GRUNDY, Hon. SYDNEY HOLLAND, Mr. F. H. NORMAN, Lord CHEYLESMORE, Rev. R. F. HORTON, Canon CURTIS, Rev. H. R. GAMBLE, Rev. JOHN BRADFORD, Rev. MONRO GIBSON, and Mr. J. T. SCRIVEN took part, the resolution was carried with seven dissentients, several members of the Council not voting.

Previously to the Lord Mayor putting the resolution Mr. SCRIVEN moved an amendment to the effect that the matter before being decided should be submitted to a general meeting of constituents of the Fund, but he failed to obtain a seconder.

The Rev. R. F. HORTON, with the idea of bringing about unanimity among the Council, moved an amendment to the effect that the Council did not consider itself competent to penalise hospitals which availed themselves of Sunday cinematograph shows, while the County Council licensed such shows for charitable purposes.

This was seconded by Mr. SYDNEY HOLLAND, but was not carried.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 8571 births and 4992 deaths were registered during the week ending March 25th. The annual rate of mortality in these towns, which had been equal to 14·9 and 15·4 per 1000 in the two preceding weeks, declined again slightly to 15·2 in the week under notice. During the first 12 weeks of the current quarter the death-rate in these towns averaged 15·8 per 1000. In London the mean recorded annual rate during the same period was also equal to 15·8 per 1000. The annual death-rates during last week ranged from 7·1 in King's Norton, 7·5 in West Hartlepool, 7·7 in Handsworth, and 8·3 in Wolverhampton; to 21·4 in Grimsby, 22·6 in Swansea, 22·7 in Coventry, and 28·8 in Middlesbrough. The 4992 deaths from all causes in the 77 towns showed a decline of 61 from the number returned in the previous week, and included 678 which were referred to the principal epidemic diseases, against 702 and 695 in the two preceding weeks; of these 678 deaths, 403 resulted from measles, 136 from whooping-cough, 55 from infantile diarrhœa, 48 from diphtheria, 22 from scarlet fever, and 14 from enteric fever, but not one from small-pox. The annual death-rate in the 77 towns from these epidemic diseases averaged 2·1 per 1000, and corresponded with the rate in each of the two preceding weeks. The fatal cases of measles in the 77 towns, which had been 474 and 460 in the two preceding weeks, further declined last week to 403; the highest annual death-rates from this disease among these towns last week were 5·1 in Sheffield, 5·3 in Middlesbrough, 5·6 in Wigan, and 8·5 in Devonport. The 136 deaths from whooping-cough showed a marked further increase upon the numbers in the two previous weeks, which had been 80 and 109; they caused death-rates equal to 1·5 in Rotherham, 1·6 in Norwich, 1·7 in Wigan, and 2·4 in Middlesbrough. The 48 deaths referred to diphtheria

exceeded the number in the previous week by 4; they included 15 in London and its suburban districts, 6 in Leeds, and 3 each in Manchester, Liverpool, and Bristol. The 55 deaths of infants under 2 years of age attributed to diarrhœa also somewhat exceeded the numbers in recent weeks. The 22 fatal cases of scarlet fever corresponded with the number in the previous week; 5 were recorded in Liverpool and 3 each in London, Bolton, and Bury. The 14 deaths referred to enteric fever were within 3 of those returned in the previous week, and included 2 in Birmingham. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had steadily declined in the five preceding weeks from 1276 to 1121, had further fallen to 1077 on Saturday last; 121 new cases of this disease were admitted to these hospitals during last week, against 120 and 146 in the two preceding weeks. These metropolitan hospitals also contained on Saturday last 869 cases of measles, 270 of whooping-cough, 903 of diphtheria, 35 of enteric fever, and 32 of small-pox. The 1475 deaths from all causes in London last week exceeded the number in the previous week by 56, and included 295 which were referred to diseases of the respiratory system, against numbers ranging from 421 to 284 in the five preceding weeks; 11 deaths were directly referred to influenza. In the 77 towns 151 deaths resulted from different forms of violence during the week, against 142 and 156 in the two previous weeks; and 365 inquest cases were registered The causes of 31, or 0·6 per cent., of the deaths registered in the 77 towns during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Sheffield, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Hull, Nottingham, Leicester, Salford, and in 51 other smaller towns; the 31 uncertified causes of death in the 77 towns last week included 5 in Birmingham, 4 in Liverpool, and 3 each in Stoke-on-Trent, Preston, and Gateshead.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 945 births and 633 deaths were registered during the week ending March 25th. The annual rate of mortality in these towns, which had been equal to 15·9 and 16·8 per 1000 in the two preceding weeks, further rose to 17·2 in the week under notice. During the first 12 weeks of the current quarter the death-rate in these towns averaged 16·9 per 1000, and exceeded by 1·1 the mean rate during the same period in the 77 English towns. The annual death-rate last week in the eight Scotch towns ranged from 13·4 and 14·0 in Edinburgh and Aberdeen to 24·4 in Dundee and 24·6 in Greenock. The 633 deaths from all causes in the eight towns last week showed a further increase of 16 upon the numbers in the two previous weeks, and included 55 which were referred to the principal epidemic diseases, against 60 and 66 in the two preceding weeks; these 55 deaths were equal to an annual rate of 1·5 per 1000, which was 0·6 below the rate from the same diseases in the 77 English towns; the highest rates from these diseases in the Scotch towns last week were 2·1 in Dundee and 2·8 in Perth. Of these 55 deaths from epidemic diseases last week in the eight towns, 32 resulted from whooping-cough, 12 from diarrhœa, 5 from diphtheria, 3 from scarlet fever, 2 from measles, and 1 from enteric fever, but not one from small-pox. The fatal cases of whooping-cough, which had been 36 in each of the two previous weeks, declined to 32 last week, of which 19 occurred in Glasgow, 6 in Dundee, 3 in Leith, and 2 in Edinburgh. The 12 deaths attributed to diarrhœa (including 10 of infants under two years of age) exceeded by 1 the number in the previous week, and included 6 in Glasgow and 3 in Edinburgh. The deaths referred to diphtheria, which had been 5 and 9 in the two previous weeks, declined again to 5 last week, of which 4 were recorded in Glasgow. The 3 fatal cases of scarlet fever were fewer than in any recent week; as were the 2 deaths from measles, both of which occurred in Glasgow, as did the death referred to enteric fever. The deaths referred to diseases of the respiratory system in the eight towns, which had been 108 and 109 in the two previous weeks, further rose to 115 last week, and exceeded by 16 the number in the corresponding week of last year. The 23 deaths attributed to different forms of violence exceeded by 5 the number in the previous week; 188, or 30 per cent., of the 633 deaths from all causes occurred in public institutions. The causes of 16, or 2·5 per cent., of the deaths registered in the eight towns during the week were not certified or not stated; in the 77 English towns last week the proportion of uncertified causes of death did not exceed 0·6 per cent.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,163,596 persons, 674 births and 472 deaths were registered during the week ending March 25th. The annual rate of mortality in these towns, which had steadily declined in the six preceding weeks from 24·1 to 17·4 per 1000, rose again to 21·2 in the week under notice. During the first 12 weeks of the current quarter the annual death-rate in these towns averaged 20·9 per 1000; the rate during the same period did not exceed 15·8 in the 77 English towns, and 16·9 in the eight Scotch towns. The annual death-rate during last week in the Irish towns was equal to 25·1 in Dublin (against 15·7 in London), 19·2 in Belfast, 21·9 in Cork, 20·2 in Londonderry, 26·0 in Limerick, and 13·6 in Waterford; in the 16 smallest of the Irish towns the mean annual death-rate last week was equal to 16·3 per 1000. The 472 deaths from all causes in the 22 towns last week showed an increase of 83 upon the number in the previous week, and included 23 which were referred to the principal epidemic diseases, against 26 and 21 in the two previous weeks; these 23 deaths were equal to an annual rate of 1·0 per 1000, which was 1·1 below the mean rate from the same diseases in the 77 English towns. Of these 23 deaths in the Irish towns from the principal epidemic diseases, 8 resulted from diarrhœa, 6 from whooping-cough, 4 from measles, 2 from scarlet fever, 2 from diphtheria, and 1 from enteric fever, but not one from small-pox. Of the 8 deaths attributed to diarrhœa (including 5 of infants under 2 years of age), 5 occurred in Dublin and 3 in Belfast. All the 6 fatal cases of whooping-cough (against 5 in the previous week) were recorded in Dublin, as were 3 of the 4 deaths from measles, and the death referred to enteric fever. Of the 2 fatal cases each of scarlet fever and diphtheria, 1 was recorded in Dublin and 1 in Belfast. The deaths in the 22 towns referred to diseases of the respiratory system, which had steadily declined in the six preceding weeks from 141 to 90, were last week 94. Of the 472 deaths from all causes last week, 156, or 33 per cent., were recorded in public institutions. The causes of 9, or 1·9 per cent., of the deaths in the 22 towns last week were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes of death last week did not exceed 0·6 per cent. in the 77 English towns, and was 2·5 per cent. in the eight principal Scotch towns.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE undermentioned Surgeons have been promoted to the rank of Staff-Surgeon in His Majesty's Fleet:—Thomas Francis O'Keeffe (dated Feb. 11th, 1909) and Robert Humphries Atkins (dated June 9th, 1910).

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel William J. Baker retires on retired pay (dated March 25th, 1911)

Colonel R. I. D. Hackett, late senior medical officer at Pretoria, has been transferred to India and appointed Principal Medical Officer of the Karachi Brigade. Colonel H. H. Johnston, C.B., from the Curragh, has taken over duty as Administrative Medical Officer at Chatham. Lieutenant-Colonel B. M. Skinner, M V O., from Peshawar, has taken over command of the Station Hospital at Rawalpindi. Lieutenant-Colonel J. F. M. Shine has been transferred from Naini Tal to Fyzabad. Lieutenant-Colonel G. F. Gubbin has taken up duty at the Curragh. Major E. Watts, who is serving in India, has been appointed Specialist in Midwifery and Diseases of Women and Children to the Seventh (Meerut) Division. Major S. F. Clark, from South Africa, has been appointed for temporary duty in the London

District. Major S. H. Withers has been transferred from Gharial to the Sirhind Brigade and posted for duty to the Station Hospital at Ambala Cantonment. Major F. R. Buswell, from Jubbulpore, has taken up duty at Kamptee. Major W. H. S. Nickerson, V.C., from York, has embarked for a tour of duty in India. Major John M. Buist, from Pontypridd, has been appointed to the Royal Victoria Hospital at Netley. Major H. G. F. Stallard, from Aldershot, has joined the Station Hospital at Delhi. Major H. Herrick has been transferred from Karachi to Hyderabad, Sind. Major H. B. G. Walton has been posted to the Bareilly Brigade. Major R. J. Blackham, sanitary officer of the First (Peshawar) Division, has been transferred from Cherat to Peshawar Cantonment. Major W. G. Beyts, from the London District, has arrived in India. Major I. A. O. MacCarthy, on return from a tour of service in the Straits Settlements, has taken up duty at Woolwich. Major S. J. C. P. Perry, from Dover, has joined for duty at the Station Hospital, Belgaum. Captain H. W. Russell has left the London District for duty at Aldershot. Captains G. Ormrod and M. C. Wetherell have been ordered to join the Irish Command on April 1st, and on arrival will be posted in the Belfast and Cork Districts respectively. Captain H. F. Shea, from Ambala Cantonment, has been appointed Specialist in Advanced Operative Surgery to the Eighth (Lucknow) Division. Captain J. W. S. Seccombe, from Jullundur, has been detailed for duty at Jhansi. Captain H. R. Bateman and Captain A. E. Hamerton, D.S.O., on return from special duty in the Uganda Protectorate, in connexion with sleeping sickness, have been posted to the London District. Captain R. E. Humfrey has been transferred from Naserabad to Ferozopore. Captain J. A. Bennett, from Indore, has joined for duty at the Station Hospital, Mhow. Captain J. H. Spencer, from Gibraltar, has been appointed to the Station Hospital, Ambala Cantonment. Captain G. A. Kempthorne, on return from service in India, has been posted to Piershill. Captain L. M. Purser has been transferred from the Northern Command, India, to the Sixth (Poona) Division, and appointed Specialist in Otology, Rhinology, and Laryngology. Lieutenant A. C. H. Suhr has left the Royal Army Medical College, London, for a tour of service at Malta. Lieutenant F. B. Dalgliesh has been transferred from the Station Hospital at Mhow for duty at Indore.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel J. T. Leslie, C.I.E., Sanitary Commissioner with the Government of India, has been granted leave of absence home from India for 8 months and 21 days. Lieutenant-Colonel A. Buchanan has been appointed Civil Surgeon at Amraoti and to the executive and medical charge of the Amraoti District Jail. The services of Lieutenant-Colonel D. St. J. D. Grant have been placed at the disposal of His Excellency the Commander-in-Chief in India by the Home Department of the Government of India. Lieutenant-Colonel F. J. Dewes has taken up duty as Civil Surgeon at Maymyo pending the arrival of Lieutenant-Colonel A. O. Evans from leave of absence. Major N. P. O'Gorman Lalor, Deputy Sanitary Commissioner of Burma, has been placed on special duty for a period of six months in connexion with the investigation of malarial fevers. On return from leave of absence, Major C. Duer has taken over duty as Civil Surgeon at Simla, relieving Lieutenant-Colonel H. B. Melville, who has proceeded on leave. Major G. McI. C. Smith, civil surgeon at Shahpur, has been appointed Civil Surgeon of Ludhiana. Major J. Fisher, D.S.O., on return from leave, has been appointed Residency Surgeon at Jaipur by the Foreign Department of the Government of India. His Excellency the Governor of Bombay has appointed Major T. Jackson on return from leave to officiate as Civil Surgeon at Karachi during the absence on deputation of Lieutenant-Colonel B. B. Grayfood. Captain W. R. J. Scroggie has been appointed to officiate as Civil Surgeon of Coorg during the absence on leave of Major J. L. Macrae. Captain W. W. Jeudwine has passed the colloquial test in the Punjabi language as prescribed by the Government of India for civil employ.

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st Scottish General Hospital, Royal Army Medical Corps: Ashley Watson Mackintosh (late Major, 1st Highland Field Ambulance, Royal Army Medical Corps) to be Lieutenant-Colonel, whose services will be available on mobilisation (dated Feb. 25th, 1911).

4th Scottish General Hospital, Royal Army Medical Corps: Captain James Weir retires under the provisions of paragraph 75 of the Territorial Force Regulations (dated March 25th, 1911).

DEATHS IN THE SERVICES.

Major Arthur F. Tyrrell, R.A.M.C., on March 22nd, at Queen Alexandra's Military Hospital, Millbank, aged 45 years. He was appointed surgeon-lieutenant in 1892, became surgeon-captain in 1895, and major in 1904. He served in the operations on the North-West Frontier of India, including the defence of the Malakand (medal with clasp), and in the South African war in 1900–02 as orderly officer to the Principal Medical Officer, South Africa, and took part in the operations in the Transvaal, Nov. 30th, 1900, to May 31st, 1902 (twice mentioned in despatches, brevet of major, medal with four clasps, King's medal with two clasps).

Lieutenant-Colonel Simpson Powell, R.A.M.C., on March 23rd, at Rangoon, Burma. He entered the service as surgeon in 1885, became surgeon-major in 1897, and lieutenant-colonel in 1905.

THE TERRITORIAL DECORATION.

The King has conferred the Territorial Decoration upon the undermentioned officers of the Territorial Force:—

South Midland Division: Administrative Medical Officer: Colonel William Philip Whitcombe.

Infantry.—4th Battalion, The Loyal North Lancashire Regiment: Surgeon-Captain John William Rigby.

Royal Army Medical Corps.—1st South-Western Mounted Brigade, Field Ambulance, Royal Army Medical Corps: Lieutenant-Colonel Henry John Mackay. 3rd West Riding Field Ambulance, Royal Army Medical Corps: Lieutenant-Colonel Thomas Stewart Adair. 1st Northern General Hospital, Royal Army Medical Corps: Lieutenant-Colonel John Victor Walton Rutherford.

Attached to Units other than Medical Units.—Major Charles James Marsh (retired), Major Josiah Telfer Thomas, and Major Harry Poole Berry.

Captain Robert Barclay Black, R.A.M.C., has received His Majesty's permission to accept and wear the Imperial Ottoman Order of the Osmanieh, Fourth Class, which has been conferred upon him by His Highness the Khedive of Egypt in recognition of valuable services rendered by him.

Correspondence.

"Audi alteram partem."

CHARLES BELL AND THE MOTOR AND SENSORY FUNCTIONS OF THE SPINAL NERVES.

To the Editor of THE LANCET.

SIR,—The latter part of Professor Waller's letter (THE LANCET, March 25th, 1911, p. 836), in which he contrasts the behaviour of Bell and Magendie, may be regarded as a postscript. I am well aware that the most important message often lies in the postscript, and it is there, in my opinion, that an explanation is to be found of Professor Waller's attitude towards the discoveries of Sir Charles Bell. It is not my purpose to defend the antivivisection opinions of Bell's later years; I regret them as much as Professor Waller condemns them. By way of mitigation I may urge that these were pre-anæsthetic days and that Bell was handicapped in his investigations by an uncommon love of animals. The period of Bell's life with which we are concerned here belongs not to these later years, but to the period between 1807–1822, when Bell invariably put his anatomical hypothesis to the test of experiment, and amongst many other new facts discovered, as I have already shown, the function of the spinal roots which Professor Waller had unreservedly ascribed to Magendie.

As far as concerns Bell and Magendie as discoverers of the functions of the spinal roots, I have nothing to add and nothing to withdraw from the narrative given in my last

letter (THE LANCET, March 18th). I would be content to leave the matter there to the judgment of those who have followed this correspondence were it not that in his last letter Professor Waller shows very distinct evidence of having read the original documents, the importance of which he has so often emphasised, with an unexpected laxity:—

"*Magendie in 1821—38 years of age, at the zenith of his extraordinary powers, the undisputed master of his science in Paris and throughout the continent, member of nearly every important scientific body in Europe—gave a full account of Bell's 1821 paper on the nerves of the face, as he did of any paper that he deemed to be of value.*"

If Professor Waller had consulted the original document (Vol. I. of Magendie's *Journal de Physiologie*, p. 387, 1821) he would have observed that Magendie distinctly states that he had not seen this paper of 1821, but that his communication was based on the facts supplied to him by Mr. John Shaw. The matter is important because Bell's paper on the nerves of the face represents only a small part of the work done and discoveries made by Bell between 1807 and 1822. At the end of 1821 Magendie was placed in full possession of the methods and discoveries of the Windmill-street school; in the middle of the following year (1822), by the use of these methods, and in full possession of the main discoveries of Sir Charles Bell, Magendie also discovered the function of the nerve roots.

I am, Sir, yours faithfully,

ARTHUR KEITH.

Royal College of Surgeons, W.C., March 27th, 1911.

DIET AND INOPERABLE CANCER.

To the Editor of THE LANCET.

SIR,—With reference to the letter which appeared in your issue of Jan. 14th under this title, written by Dr. Alexander Haig, and the letter by Mr. Skene Keith in your issue of Jan. 28th referring to the same, I would like to state that we have many opportunities here of obtaining cases of inoperable cancer. Cancer, especially of the buccal cavity, is very frequently met with in these parts, and in the last six years our figures for operations have been: 65 excisions of upper or lower jaw, 16 excisions of tongue, 6 excisions of female mammæ, 1 excision of male breast, and 185 cases of removal of cancer of cheek or lip, a total of 273 operations for cancer. In addition to this number we have seen about a quarter to a third more which were too advanced for operative treatment. As it is impossible to send such cases to any other medical man who is desirous of carrying out similar treatment, we can only offer to do the next best thing—viz., to endeavour to carry out any treatment suggested to us. I may add that most of our patients would be very willing to try any line of treatment which would give hope of success.

I am, Sir, yours faithfully,

JAMES DAVIDSON, M.D. Edin.

Neyoor, Travancore, South India, Feb. 28th, 1911.

THE IODINE METHOD OF STERILISING THE SKIN.

To the Editor of THE LANCET.

SIR,—I have read with interest the observations on the iodine method of disinfecting the skin described by Mr. P. Turner and Mr. H. C. Catto, of Guy's Hospital, in THE LANCET of March 18th. It may be doubted, however, whether such culture experiments as they mention afford any useful criterion of the efficiency of the method. In the first place, since the skin received two applications of the iodine solution, there must have been a certain amount adherent to the small portions which were introduced into the culture tubes. Bearing in mind the potency of iodine as an antiseptic, it is quite conceivable that the introduction of even a minute trace might be sufficient to inhibit all growth in a fluid culture. Again, the iodine method has this peculiar advantage—that it not merely sterilises the skin for the operation, but the layer remaining on the surface continues for hours to exercise an inhibitory action. Thus, any organisms which may issue from the deeper layers of the skin are prevented from infecting the wound as it heals.

During the past six months I have employed iodine as a routine method of disinfecting the skin in casualty wounds, and find that the results are distinctly superior to the orthodox ritual—ether soap, turpentine, spirit, biniodide. It may be of interest briefly to summarise my conclusions based on 500 cases: 1. Before applying the iodine solution, oil or grease, if present, should be removed by ether, but no other preliminary cleansing is advisable. 2. The B.P. tincture, freshly made, yields the best results; there seems to be no advantage in using stronger solutions. 3. When suturing lacerated wounds drainage is essential. 4. If there is much discharge the dressing should be changed within 48 hours.

In only four cases of the series was there any suppuration; in one this was perhaps traceable to a preliminary treatment with water, two cases were lacerated wounds closely sutured without drainage, while the fourth was a severely lacerated finger with a good deal of oozing where the first dressing had been left unchanged for 96 hours.

I am, Sir, yours faithfully,

Manchester, March 20th, 1911. C. F. WALKER.

THE LANTERN TEST FOR COLOUR BLINDNESS.

To the Editor of THE LANCET.

SIR,—The subject of colour-blindness has of late received some of the attention which is due to it, seeing the vast interests involved by colour-blindness on our railways and at sea. The very interesting and scientific Hunterian lectures delivered by Dr. Edridge-Green on Feb. 1st and 3rd must be appreciated by all so interested. It was a great opportunity for anyone to explain this subject. It is all the more to be regretted that the letter of Dr. Edridge-Green in your issue of March 4th is not quite worthy of him. Herein he mentioned that his thesis for the M.D. was on this subject, and mentions a pamphlet published the same year and also a leading article in THE LANCET of Nov. 9th, 1889. I cannot remember these, nor can I refer, but as Dr. Edridge-Green took his M.D. in 1889 his thesis must have been academic rather than practical, as is usual with such theses.

In a letter published in THE LANCET of Jan. 11th, 1890, I refer to Mr. St. Clair Buxton's test for colour-blindness and mention that I gather it refers to testing with coloured glasses. As Mr. St. Clair Buxton has for several years been testing with coloured glasses (since 1884 I see), and I also about the same time at this work, it is evident our experience must have been practical and not academic. I venture to state the above points from a common-sense view, not that it matters much who introduced coloured glasses for colour-testing; the point is their value, and it is obvious that the test of that value must be proved by years of work before such can be published.

My experience was gained by an extensive examination of railway employees, and in my letter of the above date I particularised how I tested them, and the object being twofold—colour-blindness, and also that the ordinary 6 in. railway signal lamp is capable of being seen at such a distance that the safety of the train was assured. Of course, the same question of distance applies to ships at sea. Whether by my simple arrangement or Dr. Edridge-Green's, or Mr. St. Clair Buxton's, it matters not, so long as it is not open to doubt.

That the test of Holmgren's wools is not sufficient, although helpful in combination, I had proved after four or five years of careful testing. Various reasons might be given, but I think the following important: firstly, from colour ignorance, which is common to the class examined; secondly, from the confusion of reds and yellows, and reds and greens; thirdly, the class who are correct in the majority of wools which you ask to be selected owing to holding them close to, and yet are not safe on the primary colours through glass, owing to lack of luminosity and distance from colour. It was these mistakes which led me to devise my slide, without previously knowing that Mr. St. Clair Buxton had worked in this way. I do not think any of my subsequent tests ever failed to detect colour blindness. I need not say a dark room is very essential.

Dr. Edridge-Green was kind enough to acknowledge in THE LANCET my use of these coloured glasses. I am unable to refer to THE LANCET, owing to change of residence and destruction of many books and all my early copies of THE LANCET through accident My object in writing you

is to emphasise this subject and to correct any erroneous ideas that may arise through the letters written.

I am, Sir, yours faithfully,

Bodicote, Oxon., March 18th, 1911. F. B. JUDGE BALDWIN.

MUSCULAR SPASM IN CARIES OF THE SPINE.

To the Editor of THE LANCET.

SIR,—Mr. Gauvain has mistaken me for somebody else. I can lay no claim to be a well-known authority on spinal curvatures, though it is a subject in which I am specially interested. I wrote the letter, at which he expresses some surprise, to point out what apparently he had temporarily forgotten—viz., that there are no anterior muscles in the dorsal region of the spine, and that, therefore, in the dorsal region the angular deformity of Pott's disease could not be produced by spasm of them. And what is his reply? "Mr. Roth has not appreciated the fact that an anterior spinal muscle is by no means synonymous with a muscle anterior to the spine." This is somewhat confusing to me. Later in his letter he again refers to "the anterior spinal muscles—i.e., the anterior of the muscles investing the spine." It is very difficult for me to understand which muscles he can mean, for in his original article you will see this statement: "The posterior muscles, because obliged to pull round the angle of the knuckle, work at a distinct disadvantage, and the balance between the extensors and *flexors*, which is nature's protection against deformity, is lost. The anterior muscles improperly antagonised draw the body forward." I beg to ask Mr. Gauvain whether by *flexors* I am to understand the anterior fibres of the erector spinæ? And if so, then for how long, and by whose authority, have these fibres been regarded as flexors of the spine? I submit that spasm of the erector spinæ in Pott's disease, rather than producing deformity, tends to prevent it.

I am, Sir, yours faithfully,

London, March 25th, 1911. PAUL B. ROTH.

MR. PAGET'S DISCLAIMER—AN EXPLANATION.

To the Editor of THE LANCET.

SIR,—With reference to Mr. Paget's reference to me in your issue of March 25th, will you permit me to point out that I never accused Mr. Paget of having objected to operations for appendicitis. It never would have occurred to me to accuse him of anything of the sort.

The simple facts are these. I had occasion to refer to Mr. Paget's remarks on Christian Science, owing to his name being dragged into the *Saturday Review* by an anonymous writer. In speaking of him I spoke of him by what I understood is his correct title—Mr. Paget—all through the letter. Later on I had occasion to refer to certain remarks by Dr. Page on appendicitis, and the typesetter, evidently becoming mixed between Mr. Paget and Dr. Page, produced the latter's name as Dr. Paget. There is the alpha and omega of the whole matter. I am, Sir, yours faithfully,

FREDERICK DIXON.

Surrey-street, Strand, W.C., March 28th, 1911.

DERMATITIS FROM TEAK.

To the Editor of THE LANCET.

SIR,—I was consulted by a joiner who was suffering from an acute dermatitis of the face and both forearms of a few days' duration. He stated that in the course of his employment he had been working with teak wood and he was convinced that some acid in the wood was the cause of the heat, swelling, and irritation of the skin, as he had on previous occasions suffered in a similar manner and always when working on teak wood. The distribution of the disease would seem to bear this out, as it was limited to the exposed parts, the joiner always working with the shirt rolled to the elbow. He also stated that several other joiners suffered in the same way, and that the disease was prevalent amongst joiners and cabinet-makers in ship-building yards where teak is largely used.

As this is the first case due to this cause I have met with I shall be pleased to hear from others if teak wood does commonly produce dermatitis, and, if so, to what constituents in the wood such a disease is due. Should it prove to be common it has an important medico-legal bearing from the point of view of compensation.

I am, Sir, yours faithfully,

March 24th, 1911. M.D., D.P.H. Camb.

*** We refer to this letter in another column.—ED. L.

TO MEDICAL FREEMASONS.

To the Editor of THE LANCET.

SIR,—May I once again, through the medium of your widely-read columns, appeal to medical men, and medical Freemasons in particular, for votes for the Masonic charities. At the forthcoming elections there are four medical candidates. Votes for any of the Masonic institutions are equally acceptable, as exchanges can be effected, and will be gratefully received and acknowledged by me.

I am, Sir, yours faithfully,

WILLIAM WILSON,

Secretary, St. Luke's Medical Lodge of Instruction.

184, Goldhawk-road, W., March 28th, 1911.

SOURCES OF INFECTION IN REGARD TO TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—I am seeking information upon a very important point in the matter of sources of infection in regard to tuberculosis, and with your permission would ask through your columns such information upon two points, viz.: (1) Is there any available record of cream, or even "fresh" butter, having been proved less liable to convey pathogenic germs than milk? Consumptive patients and delicate persons are continually having cream prescribed as a dietary, and it does seem to me that the "rising," or even the "separation," of cream may *concentrate*, so to say, the very danger it is sought to fight. May the fat globules not carry the bacilli *in greater part* with them—that is to say, leaving the "skim milk" comparatively, or it may be altogether, free? Tuberculous milk we know is dangerous. What of the cream or the butter produced from such milk? (2) Is there any record of the vitality duration of such bacilli in cream or in butter?

Information upon these points will be appreciated by all who, like myself, seek light on this matter. In the national crusade against the common scourge every corner must be examined by the scout.

I am, Sir, yours faithfully,

London, March 13th, 1911. OVERSEAS.

*** We quote an authority on this subject—viz., Professor John Percival in his book "Agricultural Bacteriology." He says that the bacterial content of fresh cream obtained by means of the separator is usually low, especially if the milk has been recently drawn from the cow under clean conditions. "It is generally lower than that of the milk from which it is derived, since many of the bacteria in the milk are driven to the sides of the separator bowl and are collected in the protein 'slime' along with any other solid particles which may happen to be present." ..... "In fresh cream raised in deep or shallow pans in 12 to 18 hours by gravitation bacteria are found in considerable numbers." It would therefore seem that cream separated rapidly by mechanical means is bacteriologically satisfactory, relatively speaking, but cream allowed to rise slowly through the bulk of the milk may carry with it the bacteriological impurities of the milk.—ED. L.

CONTRIBUTIONS TO VOLUNTARY HOSPITALS BY PATIENTS.

To the Editor of THE LANCET.

SIR,—The board of management of the Cardiff Infirmary has recently decided to try to increase the income for the working of the institution by means of a charge upon each patient. In the case of in-patients the charge will be 6*d.* per week; and in the case of out-patients they will be charged

a registration fee of 3*d.* a week. In view of the fact that the infirmary is a voluntary institution and that the large medical and surgical staff (with the exception of the residents, of course) is an honorary one, it seems to me that the position is a dangerous precedent from the point of view of the profession generally.

I am, Sir, yours faithfully,

March 28th, 1911. CARDIFFIAN.

*** There is always a risk in introducing this system that the voluntary spirit of hospitals should be obscured. The small fees bulk largely as a whole, and are undoubtedly of use to the administration, but those who contribute them may come to think, not of their own pennies, but of the aggregate big sums, and believe that they are the financial supporters of what is no longer a charity.—ED. L.

LEEDS.

(FROM OUR OWN CORRESPONDENT.)

The General Infirmary.

THE King Edward Memorial Fund now amounts to £93,466. The progress made is regarded as satisfactory, but it is clear that a great deal of energy will be required if the sum originally mentioned—namely, £150,000—is to be reached, and yet no one who is well versed in the work of the infirmary and knows the necessity that exists for some measure of extension will for a moment doubt that the appeal is fully justified. The more pressing necessities have already been referred to in this column and comprise among other things the building of a new suite of operating theatres. The selection of the most suitable site for this extension has been exercising the minds of the members of the board for some months, and a decision has not yet been finally arrived at. Those who are familiar with the Leeds Infirmary will remember the large central hall, originally intended to be left as an open space, but at the time of the opening of the infirmary by the late King when he was Prince of Wales covered over by a glass and iron roof and used for the purposes of an exhibition. Some time ago it was decided to remove this roof, and one of the reasons for this decision was that it was by some held that ample room would be found in the area of the central hall for a new and adequate suite of theatres. The retention for upwards of 40 years of a structure which was intended to be temporary has from time to time subjected the building to a certain amount of adverse criticism, most of which has been probably without any very good practical justification, at least in respect of its application to the question of the ventilation of the wards. The wards are, of course, all adequately ventilated by cross ventilation, having windows on both sides. The removal of the roof of the central hall has, however, impressed everyone with the immense improvement which it has effected in the general appearance of the infirmary, especially as seen from the main corridor, and by the great accession of light which it has secured to the main corridor and to the central staircase. No one has, of course, hitherto had an opportunity of seeing the realisation of Sir Gilbert Scott's conception of a large uncovered area in the centre of the various blocks, and now that many have had that opportunity a strong feeling is finding expression that it would be a pity to cover any part of the space with buildings. It is true that the area is large enough to permit of a space around the suggested buildings amply adequate, in the opinion of the consulting architect, Mr. Edwin T. Hall, to secure good ventilation both to the theatres and to the main corridor, and that the lowering of the terrace, which has been decided upon for other reasons, will secure, in his opinion, good light. Added to this, there is the great recommendation of the theatres being placed in a central position and very accessible from all the wards. Since the question of new operating theatres was mooted, and, indeed, within the last few weeks, the board of the infirmary has confirmed the purchase by its chairman, Mr. Charles Lupton, of some 8000 square yards of land immediately adjoining the buildings, an addition which may in the future profoundly modify the direction in which the development of the institution will proceed, and this raises questions which must be carefully considered.

The Leeds Workpeople's Hospital Fund.

At the recent annual meeting of the subscribers to this fund, which was the twenty-fourth of its series, the following grants were made to the various Leeds charities: General Infirmary, £5250; Leeds Public Dispensary, £800; Hospital for Women and Children, £800; Tuberculosis Association, £315; the District Nursing Association, £250; the New Maternity Hospital, £150; the Bramley District Nursing Association, £50; the Stanningley District Nursing Association, £50; and the Homœopathic Dispensary, £15. These sums do not by any means represent the total amount of money collected by the organisation during the past year. This, along with the small balance carried over from the previous year, amounted to £13,628, upwards of £10,000 of which were derived from the weekly penny and halfpenny subscriptions of the workers of the various workshops in the city. When this fund was started some 25 years ago all the collections went to the medical charities, and of these there were not so many as at present. Now a large amount of the money collected is expended in the maintenance of the two convalescent hospitals, admirable institutions, but which are very naturally used exclusively for those who are subscribers to the fund. This departure from the original arrangement has been regarded with some disfavour as in some measure removing the organisation from the category of a charity and placing it in that of a sick club. On the other hand, it is fair to point out that since the convalescent homes have been started the amount of funds the organisation has had at its disposal has increased to such an extent that there has been no falling off, but rather an increase, in the grants to the different charities. At a recent meeting of the executive committee of the fund, in reply to a letter from the Lord Mayor a resolution was passed that they would willingly coöperate with him in his proposed appeal to the workpeople of Leeds on behalf of the hospital memorial to His late Majesty. The amount collected in this way will form a special fund, all of which will be devoted to the infirmary.

The Death of Dr. Thomas Dobson.

By the death of Dr. Thomas Dobson, which occurred on March 26th, a link with the past has been severed, and Leeds has lost its oldest and one of its most respected practitioners. Dr. Dobson was born at Rothwell on August 21st, 1817. After acting as pupil to Dr. Horton and taking his first diploma, that of the Society of Apothecaries, he commenced practice in Holbeck, one of the manufacturing districts of Leeds, and in those days, of course, less continuous with the main centre of the town than now. He took the diploma of the Royal College of Surgeons of England in 1844, that of the Royal College of Physicians of Edinburgh in 1860, and graduated as Doctor of Medicine at St. Andrews in 1861. Always a man of great vigour, he soon built up a large practice and lived his strenuous life among his patients, for he never left Holbeck even after giving up the care of the sick. In his professional work Dr. Dobson's ability and high character caused him to be regarded with respect and affection by an unusually large circle; he probably knew more about the true needs and conditions of his patients and of the poor in his district generally than anyone else. He was actuated by the soundest motives, maintained a high professional ideal, and his manifest sincerity led to his advice being frequently sought on ethical questions by his junior professional brethren. Of Dr. Dobson's activities outside his purely professional work it may be said that he did useful work on the Holbeck board of guardians and was for some time on the Leeds town council; he was president of the Holbeck Mechanics' Institute, of which, along with the late Lord Airedale, he was one of the founders. In politics he took a considerable amount of interest, being a moderate Liberal, and one of those who in 1886 joined the ranks of the Liberal Unionists. He was a vigorous speaker, and many will remember his inspiring manner and obvious conviction of the rightness of the views which he advocated.

March 27th.

EXIT THE "BROWN DOG."—We learn that pursuant to the order made on March 8th by the Battersea borough council, the "Brown Dog" has been broken up and the inscription on the base of the monument erased.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

The Bristol General Hospital.

THE appeal for funds to pay for and endow the proposed new wing for the Bristol General Hospital has called forth a remarkable response. The committee issued a letter asking for contributions at the beginning of last week, in which the need for extension and the details of the projected wing were stated, and on March 23rd the Lord Mayor presided over a fairly attended meeting at the Guildhall, in order that the whole project might be formally subjected to the criticism of the citizens of Bristol. The meeting opened with a statement by Mr. W. Thwaites, the hospital secretary, who said that the new building would contain, if funds and circumstances permit, a maternity ward in accordance with the wishes of the late Mrs. Procter Baber, who left £10,000 for the purpose; a female medical ward to meet the heavy demands now made on the accommodation which the hospital can provide for such patients; a new dental department to take the place of the temporarily arranged department which is now doing the work in two houses at a little distance from the hospital; better accommodation for the honorary and resident staffs; a reconstructed laundry; increased bedroom accommodation for nurses and servants; and a roof-garden for convalescent patients. The total cost, including £15,000 required for endowment to meet the increased annual expenditure, will be at least £45,000. The Lord Mayor gave the scheme his warmest support and said that the meeting would have been held earlier if he had not been engaged in raising money for a memorial to the late King, a scheme which he felt should come first. Speeches by Mr. Joseph Storrs Fry (President of the hospital) and Mr. Herbert M. Baber (chairman of committee) followed, in which further details as to the new building were given; it was announced that if permission were granted the new building would be called the King Edward VII. Memorial Wing, and that the architects who had drawn up the scheme were Messrs. Oatley and Lawrence of Bristol. At the southern end of the two new wards there are to be large balconies for the patients. The Sheriff, Mr. George Riselay, moved that the scheme should receive the hearty approval of the citizens, and this was seconded by the Rev. H. Arnold Thomas. The Lord Mayor then read the list of subscriptions, which already reached the splendid total of £33,424, including Mrs. Procter Baber's bequest of £10,000 and one of £5000 from the late Lord Winterstoke. Other subscriptions were those of Mr. J. S. Fry and Mr. H. O. Wills £5000 each, and £1000 each from Mr. F. J. Fry, Mr. C. B. Hare, Mr. G. A. Wills, and Mr. H. H. Wills. A vote of thanks to the Lord Mayor brought the meeting to a close.

Bristol Royal Infirmary.

On March 14th the foundation-stone of the new surgical wing of the Royal Infirmary was laid by Sir George White, President of the institution. The meeting was more or less private, having been arranged at short notice, and the audience consisted of members of the staff and committee. The new building is to bear the name of the late King; it will cost £70,000 at least, of which £35,000 have been raised. The details of the project have appeared in this column on a previous occasion.

The Post Office and the Crusade against Tuberculosis.

The third conference of the Post Office Sanatorium Society was held in the Bristol Guildhall on March 25th, the Lord Mayor, with Mr. J. W. Shergold, the postmaster of Bristol, Sir Isambard Owen, and others, welcoming the delegates. The secretary of the organisation, Mr. C. H. Garland, stated that in the sanatoriums of the society 51 per cent. of those undergoing treatment had had their disease arrested, and that 75 per cent. of those admitted in an early stage had been enabled to return to work. The society has 47,000 members, and is entirely self-supporting—a fact which, as several speakers remarked, is a most encouraging proof that the spirit of independence and thrift is still alive in the working classes, in spite of the emasculating influence of "charity."

The Sanitary Institute.

A provincial sessional meeting of the Sanitary Institute was held at Bristol on March 17th. There was a good attendance, and an interesting discussion took place upon the Modern Methods of the Purification of Public Water-supplies. Dr. D. S. Davies, medical officer of health of Bristol, in his remarks stated that he had never heard of any disease in Bristol which had been proved to be connected with, or due to, the water-supply.

The Health of Sidmouth (Devon).

Dr. T. H. S. Pullin, the medical officer of health of Sidmouth, in his annual report for 1910, states that the death-rate for the year was 15·5, or excluding non-residents, 13·7 per 1000. The birth-rate was 14·5 per 1000. The infant mortality was 81 per 1000 births. Five deaths occurred from pulmonary tuberculosis, but two of these were visitors. Dr. Pullin states that there were 1573 hours of bright sunshine in Sidmouth during 1910. The rainfall was the heaviest since 1882, and was 8·56 inches above the average for the past 20 years. He alludes to the immunity of the town from fogs and to the excellent water-supply, but he urges the erection of a public abattoir and the necessity for erecting workmen's cottages.

The Newton Abbot (Devon) Board of Guardians and Vaccination.

The increase in the number of "conscientious exemptions" to vaccination is very marked in the West of England, and in some places, such as Gloucester and Warmley, they exceed the number of successful vaccinations. Several of the medical officers of health in their annual reports have deplored the decrease in vaccination. At the last meeting of the Newton Abbot board of guardians the subject came under discussion owing to the medical committee in its report stating that it "regretted the so-called conscientious objection to vaccination, and hoped that measures would soon be taken to repeal and remove from the Statute-book such an iniquitous Act of Parliament." An amendment was moved that the remarks of the committee should be deleted from the report, but the majority of the guardians thought differently, for 13 voted for this amendment and 18 against, consequently the report was adopted.

The Late Dr. William Andrew of Launceston.

As a memorial to the late Mr. W. Andrew, M.B., C.M. Edin., a sum of money has been subscribed with which it has been decided to complete the handsome screen in St. Mary Magdalen's Church, Launceston. Dr. Andrew took a great interest in all church matters and was for many years churchwarden at St. Mary's.

March 27th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal Edinburgh Hospital for Sick Children.

THE annual meeting of the contributors to the Royal Edinburgh Hospital for Sick Children was held at the hospital on March 23rd. The report stated that the total number of cases treated in the wards during the year was 2034, as against 2112 in 1909. Of the cases treated, 1293 were medical and 741 were surgical, as compared with 1363 and 749 in the preceding year. Of the cases admitted, 395 were infants of one year and under, and 347 were over one and under two years. The average daily number of patients in the wards was 105, and the average duration of stay was 19 days. In the out-patient department medical new cases numbered 5162, as against 4709 in 1909. Surgical new cases numbered 3200, as against 2967 in 1909. In the ophthalmic department 120 cases were treated, and in the medical electrical department 397 cases were treated, and 628 skiagrams were taken. In the surgical theatre of the hospital 642 operations had been performed, and in the out-patient department the minor surgical operations numbered 1506. The total ordinary income had been £5937 0*s.* 10*d.*, while the ordinary expenditure had amounted to £8553 16*s.* 1*d.* The number of children enjoying the benefit of the convalescent home at Muirfield, Gullane, was 174, the duration of stay having been on an average from a fortnight to three weeks.

Hospital Sunday in Glasgow.

For the year 1910 in Glasgow the amount collected for hospitals on Hospital Sunday amounted to £4727, an increase

of £69 over the previous year. The sum was allocated as follows: Royal Infirmary, £1987; Western Infirmary, £1712; Victoria Infirmary, £809. It is now 17 years since the Hospital Sunday Fund was inaugurated in Glasgow, and during that period it has divided among the three infirmaries the sum of £87,000.

Medical Inspection of Schools in Sutherland.

A meeting of the joint committee of the County Council of Sutherland and the Secondary Committee on Education was held at Golspie on March 17th. The conditions of appointment of the new medical officer of health and medical inspector of school children, in connexion with which the committee has full powers, were fully considered, and it was agreed that the full salary, including travelling expenses, be £450 a year—£230 to come from the county committee and £220 from the county council. It was agreed to advertise for applicants. The draft scheme of the new officer's duties was also passed.

Perth Hospital on Fire.

A fire of an alarming nature, but happily unattended by serious consequences to life, occurred at the Burghmuir Hospital, near Perth, on March 20th. The fire broke out in the administrative block, which is at present in course of construction, and completely destroyed it. The adjoining block, which is occupied by patients, caught fire, but the flames were speedily subdued. There was great excitement among the patients, all of whom, however, were conveyed to places of safety. The damage is considerable.

Appointment.

Dr. L. D. Cruickshank of Aberdeen has been appointed by the Carnegie Dunfermline Trust as supervisor of the various schemes connected with the baths and gymnasiums, the College of Hygiene and Physical Training, and the school clinics. The salary is £500. Dr. Cruickshank is at present lecturer on hygiene and supervisor of physical training to the students of the Training College, Aberdeen.

March 27th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Danger of Small-pox in Dublin.

THE various outbreaks of small-pox in England are causing anxiety in Ireland. Sir Charles Cameron, medical officer of health of Dublin, through the daily papers, advises those who have not been revaccinated to be so. The Dublin Sanitary Association has urged the sanitary authorities to make chicken-pox a notifiable disease for a short period, in view of possible errors in diagnosis. Though fairly well vaccinated, the population of Ireland is less so than a few years ago, partly because for the past few years the Local Government Board has declined to sanction payment for operations performed by public vaccinators elsewhere than in recognised vaccinating stations. In primary vaccinations alone there has been a drop in number of public vaccinations from 85,770 in 1902–03 to 75,430 in 1909–10.

Work of the Orthopædic Hospital, Dublin.

At the annual meeting of the supporters of this hospital last week the committee reported that the average number of beds occupied was 61, and that more than 3500 cases were treated in the extern department. Nevertheless, the maintenance of the entire establishment cost less than 15*s.* per bed per week. Mr. Justice Ross, one of the speakers at the meeting, pointed out that as the children have often to spend long periods in the hospital naturally their education suffers. As a Commissioner of National Education he had brought the matter before the Board of National Education, which admitted the necessity of providing education for these children, but so far he had been unable to obtain any assistance from the Treasury. The expense of providing a teacher would be very small, but the Board is hampered on every side by lack of funds.

Dublin Hospital Sunday Fund.

The Dublin Hospital Sunday Fund shows a falling off in 1910 of £115 12*s.* 2*d.*, the total amount collected being £3340 17*s.* 9*d.* Collections were made in 282 places of worship, and the Hospital Football Match contributed £100. The gradual decrease in the Fund for several years past is causing disquietude. It is suggested that the principle of distribution deters some subscribers.

Organisation of Asylum Workers.

For several months past there has been some discontent among asylum attendants in Ireland with the conditions of their service. Last Saturday a meeting was held in Dublin of delegates from the various asylums for the purpose of forming an Irish Division of the Asylum Workers' Association. The chief grievances of which the attendants complain are long hours of duty—sometimes as much as 14 or 16 hours a day—lack of proper accommodation for married attendants, insufficient dietary and clothing, and the unsatisfactory nature of some of the clauses of the Superannuation Act.

Research Defence Society.

The annual meeting of the Dublin Branch of the Research Defence Society was held last week, when the committee was able to report a successful year. Professor E. A. Schäfer of Edinburgh was present, and delivered an address on the position of animal experimentation in modern science.

Purdysburn Fever Hospital, Belfast.

Mr. P. C. Cowan, D.Sc., chief engineering inspector of the Irish Local Government Board, held an inquiry in the City Hall, Belfast, on March 22nd with regard to the application of the Belfast Corporation for sanction to loans of £21,000 for the purpose of extending Purdysburn Fever Hospital, and £10,000 for making advances under the provisions of the Small Dwellings Acquisition Act, 1899. Among the witnesses were the chairman of the public health committee, Dr. Robert Thomson, Mr. H. W. Baillie (medical officer of health), and Dr. A. G. Robb (superintendent of the Purdysburn Fever Hospital). This municipal hospital was opened in November, 1906, and in the first year there were 684 patients, in 1908 they had in it 583, in 1909 553 cases, and 960 in 1910—this large increase being mainly attributable to an epidemic of scaret fever, which still prevails. At the present time there is accommodation for only 168 patients. The usual requirements are one bed for every 1000 of the population, so that in Belfast instead of 168 beds there should be, Dr. Robb pointed out, nearly 400 beds. There are two resident medical men in the hospital, 15 staff nurses, 16 probationers, a matron, assistant matron, and 20 domestic servants. The present application was respecting a loan of £21,000 for the erection of two new pavilions, with accommodation for 90 more patients—that is, 44 in one and 46 in another—and 10 more in the extended diphtheria ward—100 in all. It is interesting to note that everything alleged by the medical experts who gave evidence at the Belfast Health Commission in 1906 is now admitted as to the want then existing of adequate accommodation for fever cases; and that, while at that time only about 25 to 30 per cent. of the infectious diseases cases were conveyed to Purdysburn municipal fever hospital, now over 60 per cent. go to that institution. Complaint was made by one of the witnesses of the unnecessary delay—sometimes a year or more elapsed—that often supervened between the making of an application to the Local Government Board and the time of granting of a loan. The inspector promised to do what he could to obviate such a delay.

A Medical Man and the North Louth Election.

The judges who heard the late election petition in North Louth having reported to the House of Commons that Mr. Joseph O'Brien, medical officer of the Barronstown District, was guilty of electoral bribery, the Local Government Board has notified the Dundalk guardians that Mr. O'Brien's office is vacant, and that he is debarred from holding a public office under the Poor-law or Public Health Acts for seven years. The Board directs the guardians to elect a successor, and, in the meantime, to appoint a temporary medical officer. The guardians postponed consideration of the matter for a month. A memorial in favour of Mr. O'Brien is stated to have been signed by every medical man representing all varieties of political and religious opinion in County Louth. The particular act of bribery with which he was charged was the giving of half-a-crown to a child.

Diphtheria in Rathfriland.

The Local Government Board has written to Mr. J. Lavery regarding an outbreak of diphtheria in Rathfriland,

stating that they had referred the matter to their medical inspector, Dr. B. O'Brien, who is of opinion that the water-supply of Rathfriland is not satisfactory. At the monthly meeting of Newry urban council it was decided to have the water examined which was used by the family in whose house the disease broke out.

March 28th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Medical Responsibility.

RECENT lawsuits in which patients claim damages from physicians and surgeons have called the attention of surgeons to the subject of medical responsibility. The new *Loi du Travail* (corresponding to the Workmen's Compensation Act) has encouraged the public to claim damages with or without reason. If some action is not taken all patients who do not become cured and all those who are dissatisfied with the result of an operation may summon their medical attendant before the tribunal, and the practice of medicine will soon become impossible. Dr. Bazy of the Hôpital Beaujon has already been subjected to two lawsuits. The complainants were two patients whose recovery was complete, but who thought fit to claim an indemnity from the surgeon in the first case because of the passage through the intestine, a year after operation, of a compress, the passage, however, being neither preceded nor followed by any ill effects; and in the second case because a slight burn was incurred in the course of removal of tattoo marks by the hot-air process. These lawsuits published broadcast by the lay press cannot fail to encourage other similar claims. In view of this fact surgeons are taking steps to defend themselves. Professor Delbet, in a lecture delivered at the Sorbonne, took for his subject "A Surgeon's Responsibility and its Limits." His lecture attracted much public attention. On the invitation of Dr. Bazy the Société de Chirurgie de Paris discussed the judgment of the court and appointed a commission to draw up a memorial to the Court of Justice. Since then the same subject has been treated admirably by M. Ambroise Collin, the distinguished professor of law, at a meeting of the Société de l'Internat des Hôpitaux de Paris, who laid down in his lecture two conditions as necessary for the establishment of responsibility: first, moral or material injury to the patient; secondly, professional error on the part of the practitioner. It is evident that a medical man cannot undertake to cure his patient (with a penalty attached in the event of non-success) as an architect may rightly bind himself to build a well-constructed house fulfilling all hygienic conditions. The professional fault must also be distinguished from the personal fault, while the degree of gravity of a professional fault can evidently be estimated only by colleagues and experts. Their task may be a difficult one, for in the initiation of a new treatment there is inevitably a certain degree of risk and insecurity; on the other hand, if no new treatments are tried medicine must come to a standstill. M. Collin, however, thinks that magistrates in general grasp the difficulties of the question and are disposed to show leniency where practitioners are attacked. And if, he adds in conclusion, there are some exceptions in this respect, medical men who claim the right of human fallibility may not refuse the same to the magistracy. A discussion among the members followed. By unanimous vote the following resolutions were passed:—

1. That the question of medical responsibility be diligently studied by all professional unions.
2. That all medical men should unite to support and defend colleagues unjustly attacked or the victims of extortion.

It was also agreed that the administrative bodies that employ medical men should be on the same footing as other employers bearing the consequences of professional risk, which up to the present time weighs exclusively on the physicians and surgeons. This last conclusion has reference to the desire manifested to see the Assistance Publique (of which hospital physicians and surgeons consider themselves the paid employees) take over and bear the pecuniary responsibility of accidents occurring in hospitals, as the head of a factory is liable for the injury caused by one of his workpeople. Hitherto the administration of the Assistance Publique has strenuously refused to accept this point of view, and its attitude is in direct opposition to the usual rules invoked in the application of the law concerning accidents incurred during work. Consequently the majority of surgeons have insured themselves against the risks of accident in a company lately formed which, for an annual payment of 60 francs, guarantees the responsibility of the assured to the amount of 10,000 francs. This procedure has at least one great moral advantage, which is that the so-called victims, frequently incited and persuaded by rapacious and unscrupulous lawyers, hesitate before engaging in a lawsuit directed not against a private citizen frequently ignorant of the means of defence and dreading the scandal it would evoke, but against a company well acquainted with legal forms and possessing all the necessary means of defence.

March 27th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Poisoning by Permanganate of Potassium.

Dr. Franz Cohn, physician to All Saints' Hospital in Breslau, has had under his care a patient suffering from poisoning by permanganate of potassium. Poisoning by this substance is rare, notwithstanding its frequent use by the general public for deodorising and disinfecting purposes. In every previous instance, including one recorded by Dr. Charles R. Box in THE LANCET of August 12th, 1899, p. 411, a fatal issue occurred, but the case now described terminated in recovery. The patient was a young woman who had attempted to commit suicide and was conveyed to the hospital by the police, the poison being alleged to be hydrochloric acid. She showed some loss of consciousness and spoke with difficulty. The forefinger of the right hand and the mucosa of the mouth and tongue were of a brownish colour. The cardiac action and the pulse were rather weak. The stomach was washed out with a solution containing magnesia usta as an antidote to the alleged poisoning by hydrochloric acid; magnesia was then administered by the mouth and injections of digalen and camphor were given on account of the symptoms of cardiac failure. On the following day the patient was conscious and able to speak, but it was noticeable that she passed only 300 cubic centimetres of urine in 18 hours and that containing albumin. She now admitted that she had swallowed from 15 to 20 grammes of permanganate of potassium dissolved in some water, and that she subsequently vomited. She had no knowledge of what happened to her afterwards, neither was she aware how she had come to the hospital. During the next few days her state remained nearly the same, but on the seventh day her pulse improved, there was an increased amount of urine, and the mucosa of the mouth became normal. On chemical examination the urine proved to contain manganese. On the fifteenth day all the symptoms had disappeared; the patient was now discharged from the hospital, and a letter received from her six weeks afterwards mentioned that she still continued in good health. In commenting on the case, which has been published in the *Deutsche Medizinische Wochenschrift*, Dr. Cohn said that the erosion of the mucosa was due to the liberation of oxygen in the nascent state from the permanganate. The constitutional toxic symptoms, consisting of cardiac weakness and albuminuria, were not so easy to explain. Permanganate of postassium contained two toxic substances—namely, manganese and potassium—and the observers of the cases hitherto described were not unanimous as to the part played by these substances respectively. Experiments on animals, however, proved that manganese did not produce such symptoms; it was thus very likely that the toxic effect was due to the potassium acting on the heart and the circulation. The favourable issue of the above case was, in Dr. Cohn's opinion, due to the washing out of the stomach, by which a great quantity of the poison was removed. The prognosis was not so bad as had been hitherto supposed. When the poison did not prove immediately fatal the patient's chance of ultimate recovery improved with every day that passed.

Vaccination in Germany.

Nearly every year the antivaccination society petitions

Parliament that compulsory vaccination may be abolished, but these applications have not hitherto been considered of sufficient importance to be made subjects of discussion by the House. Recently, however, the society has changed its tactics, and instead of petitioning for the abolition of vaccination it now only requests that a father shall not be fined when he declines to have his children vaccinated. This means the legal recognition of the "conscientious objector" in Germany on lines somewhat similar to those already followed in Great Britain. As the present majority of the Reichstag may possibly be inclined to agree with such endeavours, the Berlin Medical Society has taken the necessary steps for making known the opinion of the medical profession on the subject. At a recent meeting Professor Baginski proposed a motion to the effect that the society was of opinion that the law on compulsory vaccination should be maintained and that the introduction of a provision sanctioning the "conscientious objector" would be a danger for the German nation. Professor Baginski explained that the mortality of small-pox, which had formerly been 28 per cent., fell to 0·2 or 0·5 per cent. after the introduction of compulsory vaccination. Germany, he said, was more liable to an epidemic outburst of small-pox, being the neighbour of Russia and being traversed by multitudes of Russian emigrants on their way to America. England by its insular position was better protected, but, nevertheless, the amount of small-pox has considerably increased in that country since the strictness of the vaccination laws has been relaxed. Professor Baginski's motion was unanimously agreed to without discussion, Professor Orth, the President, pointing out that a discussion was quite superfluous in a question where no difference of opinion existed in the medical profession at large.

Report of the Chief Medical Officer of the Berlin Schools.

The report of the chief medical officer of the Berlin municipal schools states that 223,759 children were registered and under the supervision of the medical officers of the schools, and that during the preceding year there were 34,522 new entries of children who were examined as to their fitness for school training. No less than 3024 of them—8·76 per cent.—were sent back for one year because of mental or bodily defects. Of those attending school 45,119 were kept under medical observation. The principal conditions requiring medical attention were anæmia and rickets, after which came mental defects, abnormalities of speech, and diseases of the heart, lungs, and eyes. For children whose mental capacity is somewhat weak, but who are nevertheless not totally unable to learn, 162 classes have been formed in which 2281 children are taught. In the preceding year the new dental polyclinic for school children established by the municipal school authorities began to work, and 8406 children were sent there by the medical officers.

March 25th.

NOTES FROM SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

The Black Peril.

THERE has been an outcry during the past seven weeks on account of the reprieve of a native condemned to death for rape of a white woman at Umtali in Rhodesia. The reprieve undoubtedly has caused a feeling of uneasiness amongst Europeans, particularly those living in native areas, and this feeling has been intensified, unfortunately, by the occurrence of a number of similar outrages elsewhere since the commutation of the sentence became known. Many letters of indignation have appeared in the lay press, and strongly worded resolutions have been passed at public meetings convened for the purpose. The public generally ascribe the recent outrages to the reprieve of the Umtali criminal, but this does not seem to have been really responsible, and the police reports do not indicate that such crimes have been very much in excess of those normally occurring. Fortunately, during the agitation the public have not been led to excesses so common in the Southern States of America at such a time, but nevertheless there have been a few solitary instances, particularly in the neighbourhood of Johannesburg, where suspected natives have been handled very roughly by Europeans. It is not difficult to understand how this class of crime is regarded by those who have to live amid a large native population. A white woman so outraged, if the facts become public property, cannot hold her head up again amidst her fellows in South Africa. For this reason alone, as medical men know, in this country it is well-nigh impossible to induce an unfortunate victim of a black man's lust to call in the police, and as a rule the only cases that are reported are where a woman has been nearly done to death or where the criminal has been caught in the act. And even then the victim will rarely admit that the offence was actually committed. The penalty for rape all over South Africa is death or a term of penal servitude, with or without lashes. In certain parts, such as Rhodesia and Natal, capital punishment may be, and often is, inflicted for cases of attempted rape. It has been stated that the fear of a long term of penal servitude alone is not a sufficient deterrent to protect European women in this country. While not admitting this to be entirely true, at least it is common cause that the native does dread the cat, and that it is the fear of this rather than of imprisonment alone that deters the native criminal from committing the more venial crimes, such as stock theft, &c. Now if a native is convicted of rape of a European, he is usually sentenced to death; more rarely to a long term of imprisonment with lashes. When the death sentence is commuted, lashes, of course, cannot be substituted, and, it is argued, all real punishment is escaped. This appears to have been recognised in a measure by former South African Governors, and but rarely, for such a crime, has a death sentence been commuted, and then only on the recommendation of the judge. In the Umtali case the judge, in sentencing the prisoner, stated that he could hold out no hope of a reprieve. In Lord Gladstone's explanation communicated to the press it does not appear that the judge made any recommendation, though he stated that, had he himself been on the jury, he would have preferred a verdict of assault with intent. Whatever view may be held in the matter, the fact has to be faced that this class of crime has been far too common in the past. In a measure this is due to the fact that in the absence of female domestic labour, native males in many households have to be employed as domestic servants. Many mistresses in colonial households ignore the fact that the average native house-boy, for all his veneer of civilisation, is little removed from the primitive savage, and show a carelessness of dress and demeanour in his presence that they would avoid instinctively when with male friends or even with their brothers. The native house-boy too often is looked upon as a mere chattel, until, owing possibly to drink or dagga, there s a terrible experience, and the perils of South African life for white women are again emphasised. It is to be hoped that with the breaking down of tribal customs native women will come more freely into the domestic labour market, for if the native house-boy could be replaced by female labour there is no doubt that regrettable crimes such as that at Umtali would occur much less frequently. It is, however, imperative that the employment of the native nurse-boy should be prohibited by law. In certain parts of South Africa native nurse-boys are frequently met with, and in these areas hideous crimes against white children not infrequently occur. Apart from this, it is well known that the association of children with such servants often results in lifelong depravity.

Feb. 27th.

THE OXFORD EYE HOSPITAL.—The twenty-fourth annual report of the Oxford Eye Hospital shows that useful work has been done by this institution during the year 1910. The hospital is becoming an important centre for ophthalmological teaching as is shown by the fact that surgeons from all parts of the British Empire and America attended at the institution last year for their three months' clinical work preparatory to the examination for the Diploma in Ophthalmology. It may also be noticed that at the first Ophthalmological Congress at Oxford in July last several important operations were performed for the first time in this country by their inventors at the hospital. It is pointed out in the report that the hospital authorities are greatly handicapped by want of a suitable room for carrying on the scientific work of the hospital.

Obituary.

LEONARD STRONG McMANUS, M.D., M.CH. R.U.I.,

DIRECT REPRESENTATIVE FOR ENGLAND ON THE GENERAL MEDICAL COUNCIL.

WE much regret to announce the death of Dr. L. S. McManus of Mayo House, Spencer Park, Wandsworth Common, who died on Sunday morning at his residence after a prolonged illness. For some seven months he had suffered acutely from a cardiac disorder from which he scarcely expected to recover, though his immediate friends were hopeful almost to the last. Dr. McManus himself was particularly cheerful as recently as Friday and Saturday last. He was only 54 years of age.

The late Dr. McManus was born at Killeadean, Co. Mayo, Ireland. He was educated in Dublin and qualified in 1882 as M.D., M.Ch. at the Royal University of Ireland. Rather more than 25 years ago he married an Irish lady and settled in Battersea, where he soon acquired a very extensive practice. He interested himself in municipal and political affairs with great advantage to those with whom he was associated. They on their part were not slow to acknowledge his ability and his worth. He was always in the forefront of all disputes, political or professional, and while he enjoyed in the highest degree the confidence and the esteem of those whom he led, he gained the respectful admiration of his opponents. Only on March 9th last, as we recorded in our columns, Dr. McManus's public services were acknowledged by the presentation of a cheque for £300 and two pieces of plate. His municipal efforts were mainly directed towards the bettering of the conditions in which the poorer people of Battersea lived. As a member of the health committee he was zealous for perfected sanitation and better housing. He induced the borough council to establish a depôt for the supply of sterilised milk for infants, and he had the satisfaction of knowing that the working of the depôt resulted in a considerable diminution of infant mortality. Dr. McManus was also instrumental in securing the establishment of baths and washhouses, of recreation-rooms and gymnasia for young people, and of centres for physical culture. In the sphere of party politics he was a prominent leader of Battersea Conservativism, and if he had allowed himself to be nominated as a candidate would have probably secured more suffrages than any other opponent to the popular Minister so closely associated with the constituency. Among the poor his popularity was unbounded. The working-man Radical of Battersea readily forgot questions of politics when he remembered that Dr. McManus was always ready to freely give the benefit of his professional knowledge and skill and the resources of his surgery to any of the sick poor. In this respect Dr. McManus's generosity was perhaps carried to extremes. He was highly esteemed by the profession, as was shown by his election to the General Medical Council as one of the Direct Representatives for England. He was twice president of the South-West London Medical Society and a Past Master of the Tuscan Lodge of Freemasons. His death will entail an election of a new Direct Representative, but this election may be postponed until the autumn so that the four Representatives may be elected simultaneously.

THOMAS REID, M.D. GLASG., LL.D., F.F.P.S. GLASG.

BY the death, at 80 years of age, of Dr. Thomas Reid, at Glasgow, on March 23rd, the profession has lost a distinguished ophthalmic surgeon. Dr. Reid was born in 1830. He was for a while engaged in an engineering workshop, intending to adopt engineering as a profession, but finally decided on the medical profession. He studied at the University of Glasgow, where he took his M.D. in 1857. He entered on general practice in Glasgow, but almost from the first he began to specialise in ophthalmology. In 1868 he became an official member of the staff of the Eye Infirmary. In the meantime he had begun to devote himself to microscopical work with that ardour which characterised him all through his life where questions of histology were concerned. Through this work he was brought into contact with Professor Allen Thomson, who strongly supported his appointment to the Waltonian lectureship in ophthalmology in the University in 1869. He retired from this lectureship in 1900 and also from active work in the Eye Infirmary. He was also honorary consulting oculist to the Western Infirmary and Sick Children's Hospital. Dr. Reid had acquired through his early training in microscopy a bent towards scientific research in which he was actively engaged to the last. The quality of his microphotographic work gained a gold medal for his display at a congress in the University of Turin. Among his favourite pursuits was the study of mathematics and languages. Dr. Reid rendered great assistance, both financially and otherwise, to the Marine Biological Station at Millport, from its commencement up to the end of his life. The University of Glasgow conferred upon him in 1896 the degree of LL.D. In 1903 he became a foreign corresponding member of the Royal Academy of Medicine of Turin, and received from the King of Italy in 1908 the Order of "Commendatore of the Crown of Italy." Dr. Reid was greatly esteemed by his professional brethren.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced: Dr. Ferdinand Lohmeyer, formerly extraordinary professor of surgery in the University of Göttingen and author of a handbook of surgery. His age was 85.—Dr. Pouchin, professor of pharmacy and materia medica in the Rouen Medical School.—Dr. August Lucae, formerly Professor of Otology in the University of Berlin, aged 76 years. He studied medicine in Berlin and Bonn, and after graduating, being much interested in music and the science of acoustics, treated from the physiological point of view, worked under Helmholtz and König, subsequently studied the treatment of ear diseases under Politzer of Vienna and Toynbee of London, afterwards settling down in Berlin as *privat-docent* of otology in 1865. He subsequently obtained an honorary professorship and retired three or four years ago. He wrote a few papers on his specialty and introduced the treatment of otosclerosis by means of vibratory massage.—Dr. H. Haake, *privat-docent* of midwifery in the University of Leipsic.—Dr. S. Arloing, professor of experimental and comparative medicine in the University of Lyons.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held in March the following candidates passed in the subjects indicated:—

Surgery.—E. M. B. Hall (Section I.), Royal Free Hospital; F. O'Neill (Sections I. and II.), Durham; and A. D. Vernon-Taylor (Sections I. and II.), Guy's Hospital.
Medicine.—A. De Luyck (Section I.), Brussels; J. Ellison (Sections I. and II.), Cambridge and St. George's Hospital; T. T. O'Callaghan (Sections I. and II.), Guy's Hospital; and T. F. O'Mahony (Section II.), London Hospital.
Forensic Medicine.—H. R. L. Allott, Sheffield; H. H. Budd, St. Mary's Hospital; and T. T. O'Callaghan, Guy's Hospital.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—H. R. L. Allott, J. Ellison, F. O'Neill, and A. D. Vernon-Taylor.

—The Gillson Scholarship in Pathology, 1911, has been awarded to Henry Letheby Tidy, M.A., M.B., B.Ch. Oxon., M.R.C.P. Lond., M.R.C.S. Eng., Oxford University and London Hospital.

UNIVERSITY OF LIVERPOOL.—At examinations in March the following candidates were successful:—

DEGREES OF M.B. AND CH.B.

Second Examination.—Part A, Anatomy and Physiology: C. W. Dixon, R. W. Gemmell, H. E. Marsden, and W. F. Young. Part B, Materia Medica: L. R. G. de Glanville and H. P. C. de Silva.
Final Examination.—Part I.: D. H. Clarke and J. E. Gething. Part II.: Ethel M. Baker, J. E. Gething, R. Heald, and E. W. Moore. Part III.: J. Bamforth, T. C. Clarke, and P. Lé P. Nortjé (second-class honours).

DEGREE OF B.D.S.

Third Examination.—F. Wilkinson.
Final Examination.—H. M. Clothier and H. T. Imlach.

DIPLOMA IN DENTAL SURGERY.

Third Examination.—P. G. Capon.
Final Examination.—G. Q. Dinn.

DIPLOMA IN VETERINARY HYGIENE.

J. R. Barker, T. G. Millington, and W. Taylor.

VICTORIA UNIVERSITY OF MANCHESTER.—At examinations held in March the following candidates were successful:—

FINAL M.B. AND CH.B.

J. F. Cocker, John Cowan, E. R. Eatock, P. S. Green, Edgar Grey, W. Howarth Parkinson, Alexander Reid, J. R. Rigg, J. P. Stallard, and Gordon Whitehead.

Medicine.—Mabel E. May and J. B. Scott.

Obstetrics.—Harold Heathcote.

E. R. Eatock was awarded first-class honours, taking distinction in Obstetrics, Medicine, and Surgery.

SECOND M.B. AND CH.B.

Ada L. Bentz, F. C. Bentz, W. R. Blore, H. N. Crossley, H. C. Duffy, Joseph Fielding, H. S. Gerrard, C. G. Lees, F. G. Prestwich, and Gladys H. Ramsden.

Anatomy.—Roderic MacGill.

Physiology.—F. L. Newton (with distinction), J. F. O'Grady, and Ernest Talbot.

THIRD M.B. AND CH.B.

General Pathology and Morbid Anatomy.—Walter Barnes, L. T. Challenor, C. L. Graham, Harold Harrison, George Jackson, and A. H. Macklin.

DIPLOMA IN DENTISTRY (FINAL EXAMINATION).

C. S. Harding.

Systematic Surgery and Dental Surgery.—Wilfred Jackson.

DIPLOMA IN DENTISTRY (THIRD EXAMINATION).

H. R. Ellis, W. F. Gregory, Robert Ramsbottom, and D. H. Sutton.

Anatomy and Physiology.—S. G. Ross.

DIPLOMA IN PUBLIC HEALTH.

W. J. Cox, M.B., Ch.B., C. M. Craig, M.D., D. R. Gilder, M.R.C.S., L.R.C.P., W. E. Henderson, M.B., Ch.B., E. H. Titcombe, M.B., Ch.B., H. M. Williamson, M.B., Ch.B., and B. M. Wilson, M.B., Ch.B.

DIPLOMA IN VETERINARY STATE MEDICINE.

J. R. Hayhurst, M.R.C.V.S.

UNIVERSITY OF DURHAM.—At examinations held recently the following candidates were successful:—

FIRST EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICINE.

Elementary Anatomy and Biology, Chemistry, and Physics.—First-class Honours: William Stott, College of Medicine, Newcastle-upon-Tyne. Second-class Honours: Charles Henry Keay and Edgar James Tyrrell, College of Medicine, Newcastle-upon-Tyne. Pass list: Arthur Farrell Renner Dove, John Douglas Ferguson, Mary Sarah Gordon, and Norman Alexander Martin, College of Medicine, Newcastle-upon-Tyne; Charles Rees Smith, Guy's Hospital; and Charles Gordon Strachan, College of Medicine, Newcastle-upon-Tyne.

Elementary Anatomy and Biology.—Horace George Bennett Dove, Ethne Haigh, George Irving, Edward Ek Dung Lau, John Eric Measham, William McDonald Pettigrew, John Dover Proud, Bertram Sergeant, Alfred Smirthwaite, and Alfred Cresswell Taylor, College of Medicine, Newcastle-upon-Tyne.

Chemistry and Physics.—George Gordon Baty and William John Bowden, College of Medicine, Newcastle-upon-Tyne; John Francis Carter Braine, Guy's Hospital; Patrick Alexander Clements, College of Medicine, Newcastle-upon-Tyne; Cyril Charles Herbert Cuff and Henry Hawes Elliot, Guy's Hospital; Frank Wilson Harlow and James Dixon Johnson, College of Medicine, Newcastle-upon-Tyne; David Rees Jones, Guy's Hospital; Hugh Ley Puxon Peregrine, St. George's Hospital; and Douglas Oliver Richards and Philip Savage, Guy's Hospital.

Elementary Anatomy.—William Herbertson, B.Sc., College of Medicine, Newcastle-upon-Tyne.

SECOND EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICINE.

Anatomy and Physiology.—Second-class Honours: Frederick John Nattrass, Mary Lyle Haigh, and William Kerr Russell, College of Medicine, Newcastle-upon-Tyne. Pass-list: William Bell and George Albert Berkeley-Cole, College of Medicine, Newcastle-upon-Tyne; Arthur Butterfield, Edinburgh School of Medicine and College of Medicine, Newcastle-upon-Tyne; Ishmael Gustavus Cummings and Idris David Evans, College of Medicine, Newcastle-upon-Tyne; Arthur Causton Freeth, St. Mary's Hospital; Charles Stewart Parnell Hamilton, Charing Cross Hospital; Maurice Henry de Jersey Harper and Edward Rowland Alworth Merewether, College of Medicine, Newcastle-upon-Tyne; Roger Paul Ninnis, Guy's Hospital; Grace Winifred Pailthorpe, London School of Medicine for Women; and Ivan Miller Pirrie, Donald Charles Scott, Andrew Smith, Frank Blair Robson, and Sydney Thompson, College of Medicine, Newcastle-upon-Tyne.

DIPLOMA IN DENTAL SURGERY (L.D.S.).

First Examination.—Chemistry and Physics.—First-class Honours: Wallace Edwin Hurford, College of Medicine, Newcastle-upon-Tyne. Pass-list: Frederick John Gilbertson and James Leslie Liddell, College of Medicine, Newcastle-upon-Tyne.

Second Examination.—Dental Mechanics, Dental Metallurgy, and Dental Materia Medica.—Second-class Honours: George Vernon Watt, College of Medicine, Newcastle-upon-Tyne. Pass: William Hutson, College of Medicine, Newcastle-upon-Tyne.

FOREIGN UNIVERSITY INTELLIGENCE.—*Basle:* Dr. Alfred Gigon has been recognised as *privat-docent* of Medicine.—*Berlin:* Dr. G. Arndt has been recognised as *privat-docent* of Dermatology, Dr. W. Siegwart as *privat-docent* of Midwifery and Gynæcology, and Dr. F. Rosenbach as *privat-docent* of Surgery.—*Erlangen:* Dr. Scheibe of Munich has been offered the chair of Laryngology and Otology, vacant by the migration of Professor Denker to Halle.—*Kiel:* Dr. Werner Runge has been recognised as *privat-docent* of Psychiatry.—*Königsberg:* Dr. R. Stumpf has been recognised as *privat-docent* of Pathological Anatomy.—*Madrid:* Dr. Sánchez di Rivera y Marset, surgeon to the Victoria Eugenia Dispensary, has been appointed Honorary Professor.—*Modena:* Dr. Lorenzo Capelli has been recognised as *privat-docent* of Operative Medicine.

A TABLET TO THE LATE MR. HARRY WILLIAM COX.—On March 23rd the Mayor of Hackney unveiled in the Hackney town-hall a tablet, furnished by the inhabitants of the borough, in commemoration of the services rendered at the cost of his life to human nature by Mr. H. W. Cox through his pioneer work with the X rays. The inscription on the tablet, which is of severely chaste design in Culn brass and oak, was designed and wrought by the well-known firm of Gawthorp and Sons, and reads as follows:—

In Honour of
Harry William Charles Cox,
Consulting Electrician,
Who died at Hackney 9th July, 1910.
He contracted a malignant disease while
perfecting Apparatus for adapting the
X-rays to the relief of human suffering.

Tributes to the work of Mr. Cox were paid by the Mayor, Sir Albert Spicer, and Mr. Bottomley, M.P., the last of whom said that having regard to the services rendered by Mr. Cox it would be a disgrace if his widow and children were not placed in the position they were entitled to occupy.

THE LONDON SCHOOL OF CLINICAL MEDICINE.—The annual dinner of the students and staff of the London School of Clinical Medicine was held on March 24th, at the Prince's Restaurant, Piccadilly, under the chairmanship of Admiral Lord Charles Beresford. After the usual loyal toasts, Lord Charles Beresford, in proposing the toast of the "London School of Clinical Medicine," announced that the King had doubled his subscription to the Dreadnought Hospital. He pointed out that the London School of Clinical Medicine was established to provide instruction for medical men desirous of keeping themselves informed of the latest methods and discoveries in medicine and surgery, a course that was rendered imperative by the rapid growth of the science of healing. Such instruction was particularly necessary for medical officers of the Crown services, whose duties kept them away for long periods from centres of study. There was no more fitting place for these men than the Seamen's Hospital at Greenwich, which in its 250 beds treated every form of ailment, especially those which attacked men of the services. The school was well equipped and had a staff of physicians and surgeons of the highest rank in the profession. The work at the Dreadnought Hospital comprised many phases—study for higher examinations, for missionary work, for work in the provinces, the colonies, and foreign countries; coaching for aspirants for entry to the services, and special operative work for the general practitioner willing to devote part of his leisure to self-improvement. Since the formation of the school, only five years ago, 479 students, among whom were 47 of his old comrades, the naval medical officers, had taken the post-graduate course, and an arrangement now existed whereby about 30 naval officers annually attended the school. He expressed the full appreciation by his service of the work of the medical officers, and of their zeal in endeavouring thus to keep themselves abreast of the progress of their profession. He urged the establishment of an institution for men of the services who contracted consumption, and spoke of the need of more well-equipped hospital ships, paying a tribute to the old *Maine*. It was, he said, a duty of every person in the State to make it possible that no one engaged in the service of his country should have to add avoidable risks to unavoidable ones. Sir William Bennett, in responding to the toast, remarked on the insufficiency of post-graduate teaching in this country, which, he said, suffered under a disadvantage in the lack of official recognition. In other countries post-graduate medical education was regarded as a subject of the utmost importance. We had three or four properly equipped post-graduate schools in London, but they were rivals, even if friendly ones, and he thought that it should not be an impossible task to create out of them a post-graduate school that should be the equal, if not the superior, of any such school in Europe. He said that, notwithstanding this, a great deal of very good work was undoubtedly being done by the London School of Clinical Medicine, the credit of which was in large part due to the

indefatigable labours of their excellent Dean, Dr. C. C. Choyce. Professor R. Tanner Hewlett also replied. Sir William Allchin, in responding to the toast of "The Guests," proposed by Captain A. W. Clarke, described the difference between modern methods of teaching and those of his own day, when the same man might teach surgery, pathology, pharmacology, and anatomy at a hospital, and carry on an extensive private practice at the same time. Dr. Frederick Taylor proposed the toast of "The Chairman," and referred to Lord Charles Beresford's work with the Naval Brigade in the Khartoum Expedition. The proceedings terminated with a reply from the chairman.

ALLEGED LIBEL ON A MEDICAL MAN.—At the Trowbridge (Wilts) police court on March 23rd Ellen Chapman of Easterton was brought up on the charge of having wilfully and maliciously libelled Dr. James Pearse of Trowbridge by means of letters and post-cards. After the hearing of the case last week the accused was provisionally committed for trial at the assizes and sent to Devizes Prison with a request that the state of her mind should be inquired into. The medical officer of the prison stated that he had observed the woman for the past week and had come to the conclusion that she was insane. She was now formally committed for trial. The prosecution was undertaken by the Medical Defence Union.

DONATIONS AND BEQUESTS.—Among the bequests of the late Mr. J. H. Houldsworth are the following: £50 to his nurse, £5000 to the London Homœopathic Hospital, £1000 each to the Glasgow Royal Infirmary, the Western Infirmary, Glasgow; the Victoria Infirmary, Glasgow; the Royal Asylum for the Blind, Glasgow; the Glasgow Royal Hospital for Children, the Broomhill Home for Incurables, and the Ayr County Hospital.—The University of Manchester has received an anonymous gift of £1000 for promoting research work in medical subjects.—The Queen's Hospital for Children, Hackney-road, has received £2000 from the *Referee* Children's Fund for a ward in the Little Folks Home at Cooden, Bexhill, which is to be opened this summer as a seaside branch of the hospital.

THE HOME HOSPITALS ASSOCIATION (FOR PAYING PATIENTS).—The thirty-third annual meeting of this association was held at Fitzroy House, Fitzroy-square, W., on March 24th, the chair being taken, in the absence of the Duke of Northumberland, by Sir Henry Burdett. In proposing the adoption of the report the chairman reminded the meeting that the institution was the pioneer nursing home in the country, and it had had increasing success. Last year he drew attention to the fact that the average stay of patients in the home was only 17 days, whereas the average in the best hospitals for acute surgical cases was 21 days. This year the home's average was only 16 days. That spoke volumes for the hygienic condition and the good management of the institution. Seventy-eight members of the medical profession had found in the home all that they required for their cases. In regard to the medical treatment of all classes the present opportunity for reform was one which should be grasped and welcomed. The aim should be the coöperation of all existing agencies for the relief of the sick poor. The masses of the people in towns were ignorant of how best to obtain the relief they needed. At present there was much overlapping between the Poor-law and voluntary systems of medical relief. With regard to the question of the opening of cinematograph shows on Sunday for the benefit of some hospitals he ranged himself on the side of those who thought it a good and necessary thing in cities that the population should be given every opportunity to attend places of resort in their leisure, rather than that they should be obliged to spend such leisure in the streets or the public-house, or to pass all of it in their own homes, most of which had but very limited accommodation. The County Council only permitted cinematograph shows to be opened on Sunday when it received a request from the managers of a hospital or some other charity to permit that exhibition on the Sabbath in the interests of the hospital. The result so far had been an addition to hospital funds of between £3000 and £4000 in a year. The Hospital Sunday collections amounted to £40,000 a year, and the justifiable effort to increase the income of certain hospitals was an unintentional menace to the stability of the Fund itself, which might possibly be irretrievably damaged thereby. Only seven hospitals had taken part in that kind of business, and on them rested the responsibility for the difficulty which had arisen. The Hospital Sunday Fund must keep itself free from any expression of opinion on the merits of the question of Sunday cinematograph exhibitions, and they must leave a free hand to the hospitals to raise their income from whatever source they considered well. A free hand must also be left to the congregations who sent their collections to that great Fund. The report was duly approved, and other formal business transacted, the meeting closing with thanks to Sir Henry Burdett for his address.

THE FISHMONGERS' COMPANY.—An excellent dinner was served on March 23rd, in the magnificent hall of the Fishmongers' Company, the occasion being one to which a very large representation of the medical profession was invited. The Earl of Portsmouth, the acting Prime Warden, was in the chair, and he was supported on his right by the President of the Royal College of Surgeons of England, Mr. Henry T. Butlin, D.C.L., and on his left by the President of the Royal College of Physicians of London, Sir Thomas Barlow, Bart., K.C.V.O. After the usual loyal toasts the medical profession was honoured by the toast of "Our Guests," to which Mr. Butlin and Sir Thomas Barlow replied in appreciatory terms. Afterwards an excellent programme of music was provided.

PRESENTATIONS TO MEDICAL PRACTITIONERS.—F. G. Crookshank, M.D. Lond., who is about to retire from the post of medical officer of health to the urban district council of Barnes, was on March 14th presented on behalf of the members and staff of the district council with an illuminated testimonial, under the seal of the council, and a silver salver. Previously to the presentation the council passed the following resolution, on the recommendation of the public health committee:—

That this council does hereby place on record its entire appreciation of the valuable services rendered to the district with conspicuous ability by Dr. Francis Graham Crookshank throughout the ten years (March, 1901, to March, 1911) during which he has acted as medical officer of health and superintendent of the isolation hospital, and have accepted his resignation of those offices with very great regret.

—At Crediton (Devon), on March 23rd, Sir John Shelley, on behalf of the subscribers, presented Mr. Henry Marten Body, M.R.C.S. Eng., L.S.A., with a silver rose-bowl, suitably inscribed, and mounted on an ebony stand, an old oak side-board, and a chesterfield couch, as a mark of respect and esteem, on the occasion of his retiring from active work and leaving the town. Mr. Body had been for 43 years in practice at Crediton, and had held the appointments of medical officer of health to the urban and rural district councils.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held at Caxton House, Westminster, on March 23rd, with Sir Francis H. Champneys in the chair. A letter was received from the secretary of the Midwives Institute announcing the re-election of Dr. George Ernest Herman as the representative of the institute on the Central Midwives Board. A letter was considered from the clerk to the Willesden guardians objecting to the district medical officer being summoned to assist a midwife in an emergency by means of an order on the relieving officer. The Board directed that the attention of the midwife be called to the necessity of complying strictly with the terms of Rule E.18, and that a copy of the correspondence be sent to the local supervising authority for Middlesex. A letter was considered from the Deputy Registrar of Nurses and Midwives, New Zealand, asking the Board to admit to the roll women holding the State midwifery certificate of New Zealand or alternately to recognise training schools in the Dominion. The Board decided that the reply be (*a*) that the Board has at present no power to grant reciprocal terms of treatment to women holding midwifery certificates in other parts of His Majesty's dominions; and (*b*) that the Board will be pleased to consider the matter should Clause 12 of the Midwives (No. 2) Bill, 1910, or a similar clause authorising the Board to grant reciprocal terms, become law. A letter was considered from Sister Henrietta of St. Michael's Home, Kimberley, Cape Colony, making a similar request with regard to women holding State midwifery certificates in South Africa. The Board decided that a reply similar to the

last be sent. Sir George Fordham proposed a series of amendments to the draft rules, some of which were adopted. It was decided to send a copy of the rules as amended to each member of the Board. If the absent members approved the chairman was to send them to the Privy Council.

A NEW Children's Seaside Home was formally opened at Exmouth on March 22nd. The building, which is situated on an elevation, has been erected at a cost of £1116. £700 of this sum have been subscribed, and the balance has been kindly lent by the Countess of Meath, free of interest.

A MEDICAL CORONER.—Dr. Walter L. Fry of Catterick, Yorks., has been appointed coroner for the northern district of Yorkshire. Dr. Fry is an M.A., M.B., B.Ch., of Oxford, and also B.C.L. (with first-class honours) of the same University. He was admitted a barrister of the Inner Temple in 1894.

THE GUILD OF THE BRAVE POOR THINGS.—A Masque of the Children of the Empire will be played by the Bermondsey Guild of Play Children at the Bermondsey town-hall to-day, Saturday, April 1st, at 3 P.M. and 6 P.M.; tickets, price 10*s.* 6*d.* reserved, unreserved 2*s.* 6*d.*, and 1*s.*, can be obtained of Mrs. C. W. Kimmins, Dame Armstrong House, Harrow-on-the-Hill.

THE ROYAL SANITARY INSTITUTE.—A sessional meeting of the institute will be held at 90, Buckingham Palace-road, on Tuesday, April 11th, at 8 P.M., when a discussion will take place on Dirt in Food, opened by Miss Emily Louisa Dove, M.B. Among those announced to take part in the discussion are: Colonel J. Lane Notter, Professor H. R. Kenwood, Mr. C. E. Cassal, and Mr. A. Wynter Blyth. The chair will be taken by Sir William J. Collins.

ROYAL EAR HOSPITAL, SOHO.—Sir Ernest Hatch, the honorary treasurer and chairman of the institution, in presiding at the ninety-fourth annual court of governors on March 24th, said that the work of the hospital was both economically and well done. Its doors had only been kept open by the strenuous work of its friends, and he appealed to the charitable public for further financial help in order that the efficiency of the institution might be maintained. All contributions sent to the hospital will be gratefully acknowledged.

ASSOCIATION OF MEDICAL OFFICERS OF HEALTH.—The second annual meeting of this association was held at the Holborn Restaurant on March 23rd, Dr. F. G. Crookshank being in the chair. The report of the council was considered and adopted. The question of a journal was considered, and it was decided to issue a quarterly supplement in the *Medical Officer* to be sent to all members. A conference was held later, when delegates from the following associations were present: Certifying Factory Surgeons, Postal Medical Officers, Poor-law Medical Officers, and Metropolitan Police Surgeons. Mr. D. A. Belilios, the temporary secretary, stated that the Association of Public Vaccinators had agreed to attend the meeting, but, owing to there being no council meeting till the end of April, they could not appoint delegates until that time. The delegates then voted Dr. Crookshank to the chair, and he, in his preliminary statement, said that no votes would be taken on the questions to be discussed. He invited opinions as to (1) the desirability or otherwise of some joint action being taken by the various associations of medical men holding part-time appointments when their various interests were threatened, and, in the event of the answer being in the affirmative, (2) the methods by which coöperation could be rendered possible. He suggested that the delegates should return to their respective societies, and come back with definite instructions. He then briefly referred to the recent memorandum of the Local Government Board, with special reference to their line of policy in giving the medical officers of health in the smaller districts the posts of public vaccinators, police surgeons, Poor-law medical officers, factory surgeons, and postal medical officers, so that the medical officer of health could be independent of private practice. All the delegates expressed the opinion that a joint permanent committee should be formed. It was decided that the delegates should return to their associations for definite instructions and forward the results to the honorary secretary of the Association of Medical Officers of Health, who would convene a meeting later.

THE Governors of the Sunderland Infirmary have received permission from the King to add the title "Royal" to the name of the infirmary.

THE SMALL-POX EPIDEMIC IN LONDON.—After 11 days' complete freedom from notification of small-pox, one fresh case was notified from Deptford on March 24th, and one from Mile End on March 25th. On March 26th and 27th, however, no new notifications were made.

KING'S COLLEGE HOSPITAL.—The King has been graciously pleased to accede to a request by the committee of management that the two central ward blocks of the new King's College Hospital at Denmark Hill should be named the King Edward VII. Block and the King George V. Block.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Cancer Research International Conference.

There has been presented to Parliament the report of Dr. E. F BASHFORD, General Superintendent of Research and Director of the Laboratory of the Imperial Cancer Research Fund, on the Second International Conference on Cancer Research held at Paris from Oct. 1st to 5th, 1910. Dr. BASHFORD was a delegate of H.M. Government at the conference.

School Hygiene.

Dr. C. ADDISON intends at an early date to introduce a Bill in the House of Commons to require that in public elementary schools instruction shall be given in hygiene and to girls instruction in the care and feeding of infants.

HOUSE OF COMMONS.

WEDNESDAY, MARCH 22ND.

Tuberculosis in Trinidad.

Mr. POINTER asked the Under Secretary of State for the Colonies whether his attention had been drawn to the increase of tuberculosis in the colony of Trinidad, there being, according to the latest returns of the Registrar-General, a death-rate from that disease in Port-of-Spain of 4·81 per 1000 of the population; and whether, in view of the suffering endured as a result, especially by the working classes, he intended to take any action in the matter on the lines indicated by the report of the commission appointed to inquire into conditions of tuberculous disease in Trinidad.—Colonel SEELY said in reply: The attention of the late Secretary of State was drawn to the prevalence of tuberculosis in Port-of-Spain and he communicated with the Governor on the subject. The question of remedial measures is now being considered by the colonial Government.

THURSDAY, MARCH 23RD.

Aliens and Disease.

Mr. ASTOR asked the Secretary of State for the Home Department what were the principal diseases in respect of which aliens were ejected under the Aliens Act; how many had been refused admission into England in 1909 and 1910 by the medical officer; and what number were rejected under each of the specified diseases.—Mr. CHURCHILL (by written answer) replied: Leave to land under the Aliens Act is refused not by the medical inspector but by the immigration officer, who in medical cases is guided by the certificate signed by the medical inspector. An immigrant must be refused leave to land "if he is a lunatic or an idiot, or owing to any disease or infirmity appears likely to become a charge upon the rates or otherwise a detriment to the public." During 1909 leave to land was finally refused under the foregoing provision in 417 cases, and during 1910 the number of cases was 206, a total of 623 for the two years. The particular grounds of rejection may be thus classified:—

	1909.	1910.	Total.
Trachoma	238	61	299
Other eye diseases	—	25	25
Venereal diseases	57	33	90
Skin and scalp diseases	23	2	25
Lunacy or idiocy	4	1	5
Tubercular diseases	3	5	8
Miscellaneous diseases	5	5	10
Infirmities likely to lead to chargeability (including cardiac disease, deformity, senile decay, paralysis, &c.)	87	74	161

Dresden Hygiene Exhibition.

Mr. ALLEN BAKER asked the Secretary of State for the Colonies whether the London and Liverpool Schools of Tropical Medicine had been instructed to prepare an exhibit for the International Hygiene Exhibition at Dresden, and, if so, what form this exhibit would take.—Mr. HARCOURT replied: I understand that there is to be joint exhibit from the two schools, but I have no information as to the form which the exhibit will take. As the schools are not under the control of His Majesty's Government there has been no question of giving instructions.

Mr. ALLEN BAKER asked the Under Secretary of State for India whether he had been requested in April, 1910, to transmit the documents relating to the International Hygiene Exhibition, Dresden, 1911, to the Government of India and, if so, whether he had received any intimation from the Government of India as to whether it was proposed to send an exhibit to Dresden.—Mr. MONTAGU answered: The documents mentioned by the honourable Member were transmitted to the Government of India. The answer to the second part of the question is in the negative.

Newcastle Corporation Bill: Milk Legislation.

At the time for opposed private business the Newcastle-upon-Tyne Corporation Bill was considered on the motion for second reading. Part XII. of the Bill contained a series of clauses which proposed to give the corporation a certain measure of control over the sources of the milk supplies of the city.

Mr. BOOTH moved as an amendment the rejection of the Bill on various grounds.

Mr. GOLDSMITH seconded the amendment. He said that Clauses 74 and 75 proposed to confer on the Newcastle corporation power not only to inspect any dairy, but the supply of milk which was being offered for sale. As a Member representing an agricultural constituency, he wished to say at once that he did not deny the necessity for further legislation to control the sale of milk to the public, but he did say that it was a matter for general legislation and not local legislation.

Mr. HUDSON (one of the Members for Newcastle-on-Tyne): I am sorry to interrupt the honourable gentleman, but it may perhaps save time if I inform him that the promoters of the Bill are willing to accept an instruction to delete the milk clauses from the Bill.

Mr. GOLDSMITH said that he was raising the point in order to get a definite reply from the President of the Local Government Board in regard to the question of milk-supply. He wished to ask the right honourable gentleman whether it was his intention to introduce a Bill this year to deal with the question of milk-supply. In 1908 the right honourable gentleman, on behalf of the Government, stated that he was ready to bring in a general milk Bill, and that he hoped it would be carried that session. That was three years ago, and although the right honourable gentleman had repeated his intentions on several occasions nothing had been done. He (Mr. Goldsmith) was raising this question mainly as a member of the Local Legislation Committee which had to deal with Bills such as the one now before the House, and these Bills contained clauses very similar to those in the Newcastle Bill. In the Ipswich Bill the Local Legislation Committee had decided to hold over the milk clauses until the President of the Local Government Board had given a definite reply on this subject. Would the right honourable gentleman give the House a definite statement this evening as to whether he was going to introduce general legislation to deal with the question of milk-supply?

Mr. COURTHOPE said that he was satisfied with the announcement of the honourable Member for Newcastle (Mr. Hudson) that the milk clauses would be withdrawn, and therefore he hoped that his honourable friends who objected to the Bill on account of these provisions would not continue their opposition. In opposing the milk clauses in private Bills the agricultural members were not animated by any disinclination to sound protective regulations, but they wanted general instead of piecemeal legislation. It was generally admitted that this was a national matter and should be dealt with in a general public Bill. He was quite ready to reintroduce his own Bill on the subject, which was supported by the London County Council and other great corporations, but he hoped that it would not be necessary. He would urge the President of the Local Government Board to push forward Government legislation on the subject. Even from an agricultural point of view he could not be expected to like all the details of a Bill drafted by the right honourable gentleman so much as a Bill drafted by himself. However, from every point of view it must be recognised that this was a matter which should be dealt with by Government legislation, and he hoped that the right honourable gentleman would be able to give some indication that steps would be taken by the Government to deal with the matter during the present session. He would like, in conclusion, to pay a tribute to the extremely broad-minded way in which in dealing with this question of milk-supply the right honourable gentleman had faced the very difficult task of finding a method which was satisfactory to the interests both of the producer and consumer of this important commodity.

Mr. BURNS (President of the Local Government Board) in the course of his speech said: I have been asked to express the Government view on the question of milk. I have only to say that in 1909 I introduced a Milk Bill which had for its object dealing with the question of milk production and distribution in a general way by a general Act rather than by means of private Bills. I intended in 1909 to press that measure forward, but that turned out impossible in consequence of other legislation which, in the opinion of the House, had a greater claim on its time. In 1910 we had an exceptional session and two general elections, and it was impossible, willing as I was, to secure the passing of the Milk Bill. I may say, however, that I am still hopeful this session—especially as I have been in negotiation, which I trust may be successful, with those who previously differed from me about the Bills of 1909 and 1910—notwithstanding the exceptional nature of our work this year, to secure the passing of a general Milk Bill. It is only right that I should say that not quite so much harm has been done as was anticipated by the non-passing of the Milk Bill in 1910, because the discussion that took place in 1909 and 1910 in this House and outside it has brought home very clearly to the agricultural and milk-producing industries that they must put their house in order and adapt themselves to the growing requirements of the time with regard to milk-supply. During the last four years there has been an extraordinary diminution in infantile mortality. Some people contend that infantile mortality has been largely contributed to by a defective milk-supply. Dairymen, farmers and those connected with the agricultural industry are beginning to see that, from the point of view of enlightened self-interest, it is wise for them to adapt themselves to a cheap, a more plentiful, and a purer milk-supply. I trust that by the introduction of a Bill on this subject by agreement of all parties we shall be able to accelerate that very useful object.

Mr. CHARLES PRICE: Will the Bill apply to Scotland?

Mr. BURNS: I could not assume that Scotsmen would not allow such a beneficent measure to apply to their country.

The amendment to reject the Bill was withdrawn and the motion for the second reading was agreed to without a discussion.

Mr. COURTHOPE then moved that "It be an instruction to the committee to strike out Part XII. of the Bill (Milk Supply)."

Mr. STANIER seconded, and the instruction was agreed to.

MONDAY, MARCH 27TH.

Measles and Notification.

Mr. DAWES asked the President of the Local Government Board whether, in view of the serious epidemic of measles prevailing at present and the consequent mortality among London school children, he would consider taking the necessary steps to make measles a notifiable disease.—Mr. BURNS replied: I am at present considering what further steps can be taken to deal with this serious outbreak, and the question of making measles a notifiable disease will have my attention.

An Outbreak of Diphtheria.

Mr. WEBB asked the President of the Local Government Board whether his attention had been called to an outbreak of diphtheria at Madley, Herefordshire; whether he was aware that the medical officer of health had taken swabs from 60 or more children; that unless bacteriologically examined the disease could not be traced; and that the Dore district council refused to vote a sum of £8 for this purpose; and would he take any steps to substitute the district council by an official sanitary authority for the Dore area.—Mr. BURNS answered: My attention has been drawn to a newspaper report of this matter, and I am in communication with the local authority in regard to it. I am advised that bacteriological examinations are a great aid in diagnosing cases of diphtheria.

Vaccination and Small-pox.

Mr. POINTER asked the President of the Local Government Board whether he was aware that it was stated in the report of the medical officer of the Local Government Board for the year 1908 that in the counties of Bedford, Northampton, and Leicester the declarations of conscientious objection to vaccination made under the Act of 1907 had exceeded 50 per cent. of the births; and would he say whether any cases of small-pox had been recorded in those counties during the present year.—Mr. BURNS said in reply: I am aware of the statement referred to. With regard to my honourable friend's second question I may say that there have been no cases of small-pox this year in 46 out of the 55 registration counties. These 46 include the three counties mentioned.

Asylum Officers' Superannuation.

Viscount WOLMER asked the President of the Local Government Board what was the total amount contributed by asylum officers in England and Wales last year under the provisions concerning pensions of the Asylums Officers Superannuation Act, 1909; and what was the total number of officers who so contributed.—Mr. CHURCHILL replied: My right honourable friend has asked me to answer this question. As the Act has not been in operation for a completed year the collection of the information desired would cause much trouble and considerable expense.

Viscount WOLMER asked the Lord Advocate what was the total amount contributed by asylum officers in Scotland last year under the provisions concerning pensions of the Asylums Officers' Superannuation Act, 1909; and what was the total number of asylum officers who so contributed.—Mr. URE answered: I am unable to state the total amount contributed by district asylum officers and servants in Scotland last year under the provisions of the Asylums Officers' Superannuation Act, 1909, without obtaining a special return on the subject, but the amount of such contributions during the month of December last was £205. This may be taken as a fair measure of their contributions from May 15th when the Act came into operation, and the total amount therefore is probably about £1450. The total number of asylum officers and servants who were contributing at Dec. 15th last was 1110.

Viscount WOLMER asked the Chief Secretary to the Lord Lieutenant of Ireland what was the total amount contributed by asylum officers in Ireland last year under the provisions concerning pensions of the Asylums Officers' Superannuation Act, 1909; and what was the total number of officers who so contributed.—Mr. BIRRELL wrote in reply: The Asylums Officers' Superannuation Act, 1909, did not come into operation until April 1st, 1910, and will not have been in force a year until the 31st inst. If the noble lord will repeat his question after that date I shall be happy to obtain the information he requires.

TUESDAY, MARCH 28TH.

Surgeons in Royal Naval Volunteer Reserve.

Mr. BURGOYNE asked the Secretary to the Admiralty whether he could now say when the new scheme for surgeons in the Royal Naval Volunteer Reserve would be issued, and whether the scheme would grant them rank equal to that of surgeons in the Territorial Force.—Mr. MACNAMARA answered: The new scheme for medical officers of the Royal Naval Volunteer Reserve will be issued shortly. Under this scheme these officers will, as is the case at present, rank with medical officers of the Territorial Force of corresponding rank, according to the dates of appointment in their respective ranks.

Vaccination and Small-pox.

Mr. ASTOR asked the President of the Local Government Board whether, since the recent outbreak of small-pox, the number of persons vaccinated had increased beyond the average of the previous four years in the following towns: London, Manchester, Glasgow, and Plymouth; whether in the above towns parents who had applied for certificates of exemption had since the outbreak had their children vaccinated; and what were the respective numbers of such cases in the above towns.—Mr. BURNS answered: No figures as to vaccination and exemption certificates since the commencement of the present small-pox outbreak are yet available.

Opium and Dangerous Drugs.

Mr. THEODORE TAYLOR asked the Secretary of State for Foreign Affairs to state the date upon which the International Conference upon Opium and Dangerous Drugs was to meet at The Hague, and which were the Powers to be represented there.—Sir E. GREY replied: The 1st of July has been suggested as the date for the meeting of the conference at The Hague, but no definite decision has yet been come to regarding it. The countries invited to attend are those which took part in the International Opium Conference which sat at Shanghai in the spring of 1909. They are the United States, France, Germany, Great Britain, Japan, the Netherlands, Portugal, Russia, Austria-Hungary, Italy, Siam, and Persia.

Military Assistant Surgeons in India.

MR. KELLY asked the Under Secretary of State for India whether the cost of the entire education, board, and residence of students for the military assistant surgeon's grade was defrayed by the Government; whether the qualification such students get after four years' training was registrable under the Medical Act of 1858; what was the number of such students undergoing training annually; what was the charge on the revenues of India; whether he was aware that there were Indian medical men with registrable university qualifications who would accept these posts; on what grounds was the present system of recruiting the military assistant surgeon's grade still continued, involving, as it did, the expense of the education of the candidates; and what steps he proposed to take to remedy the system.—MR. MONTAGU (by written answer) replied: Students for the military assistant surgeon's grade are trained for four years at the expense of Government. The qualifications which they obtain are not as a rule registrable in the United Kingdom. The number of such students, and the cost of training, cannot be stated without reference to India. No change of the system of recruiting the Indian subordinate military medical service is under contemplation.

WEDNESDAY, MARCH 29TH.

Accommodation for Small-pox Cases.

MR. ASTOR asked the President of the Local Government Board what accommodation was specially reserved for cases of small-pox in small-pox hospitals and other buildings, and what additional accommodation would be available in case of serious epidemic.—MR. BURNS wrote in reply: Some 2000 beds are available at short notice for small-pox cases in London, and this number could be largely increased within no long time if necessity arose. Similar information for the rest of the country is not available in any complete form.

BOOKS, ETC., RECEIVED.

SPRINGER, JULIUS, Berlin.

Der Lupus, Seine Pathologie, Therapie, Prophylaxe. Für den Praktischen Gebrauch Geschrieben. Von Professor Dr. L. Philippson, Direktor der Dermatologischen Universitätsklinik zu Palermo. Aus dem Italienischen Manuskript übersetzt von Dr. Fritz Juliusberg. Price, paper, M.2; bound, M.2.60.

THIEME, GEORG, Leipzig.

Deutsche Zahnheilkunde in Vorträgen. Begründet von Adolph Witzel. Bearbeitet und herausgegeben von Prof. Dr. med. Julius Witzel. Heft 16. Zähne und Trauma. Von Prof. Dr. Williger, Berlin. Price not stated.

TIPOGRAFIA ARMANDO DI FABIO, Roma.

Dr. A. Ranelletti: Le Lesioni Valvolari del Cuore di Origine Traumatica. Price not stated.

TÖPELMANN, ALFRED, VERLAG VON (Vormals J. Ricker), Giessen.

Zur Historischen Biologie der Krankheitserreger. Materialien, Studien und Abhandlungen. Gemeinsam mit V. Fossel, Graz, T. v. Györy, Budapest, W. His, Berlin. Herausgegeben von Karl Sudhoff, Leipzig, und Georg Sticker, Bonn. 3 Heft. Grafton Elliot Smith und Marc Armand Ruffer: Pott'sche Krankheit an einer Ägyptischen Mumie aus der Zeit der 21. Dynastie (um 1000 v. Chr.). Mit zwei Tafeln. Vorausgeschickt ist eine Skizze von Karl Sudhoff: Zur Einführung und Orientierung. Price M.2.

UNIVERSITY CORRESPONDENCE COLLEGE, Burlington House, Cambridge. London Office: 32, Red Lion-square, Holborn, W.C.

University Correspondence College. The Calendar, 1911–1912. January, 1911. Price 1s. net.

URBAN UND SCHWARZENBERG, Berlin und Wien.

Kasuistische Beiträge zur Venenthrombose mit Besonderer Berücksichtigung älterer und Neuerer Theorien der Thrombose. Von Dr. Emil Schepelmann, Assistenzarzt der Klinik. (Beihefte zur "Medizinischen Klinik." 1911. 2. Heft. Redigiert von Prof. Dr. K. Brandenburg, Berlin.) Price M.1. or K.1.20.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.

The Medical Annual: A Year Book of Treatment and Practitioner's Index. 1911. Twenty-ninth year. Price 8s. 6d. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BRISCOE, WILLIAM THOMAS, M.D., M.Ch.Dub., has been appointed Medical Officer of Health for the Chippenham (Wilts) Rural District Council (for three years), and also Honorary Consulting Surgeon to the Chippenham Cottage Hospital.

COLE, ROBERT HENRY, M.D., M.R.C.P.Lond., has been appointed Lecturer on Mental Diseases and Mental Physiology to St. Mary's Hospital Medical School.

CROFTS, A. D., M.R.C.S., L.R.C.P.Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Windsor District of the county of Berks.

FAWN, G. F., L.D.S.Eng., has been appointed Dental House Surgeon at the Bristol Royal Infirmary.

FELLS, ARTHUR, M.B., C.M.Edin., has been appointed Honorary Surgeon to Out-patients at the Bristol Royal Hospital for Sick Children and Women.

FIELDEN, S., M.D.Durh., has been reappointed Medical Officer of Health for the Shildon and East Thickley Urban Council.

GEAKIE, B. J., L.D.S.Eng., has been appointed Dental House Surgeon at the Bristol General Hospital.

GIBSON, CAMERON, M.B., Ch.B.Edin., has been appointed Assistant Medical Officer to the Cheshire County Council.

GRIFFIN, WILLIAM ROBERT, M.D., B.Ch., B.A.O.Dub., has been appointed Medical Officer of Health of Tavistock (Devon).

HERBING, J. F., L.R.C.P. & S.Edin., D.P.H., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Atherstone District of the county of Warwick.

HODGE, WILLIAM LANG, L.R.C.P. & S.Edin., L.F.P.S.Glasg., has been appointed Honorary Emergency Anæsthetist to the South Devon and East Cornwall Hospital, Plymouth.

TRUBSHAW, K. V., M.B., B.S.Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Mold District of the county of Flint.

TUCKER, S., M.B., B.S.Lond., D.P.H., has been appointed House Physician at the General Hospital, Tunbridge Wells.

WARD, H. GIBBONS, M.B., Ch.B.Vict., has been appointed School Medical Officer to the Derby Education Authority.

WORTH, FRANCIS JAMES, M.D.Durh., L.R.C.P.Lond., M.R.C.S., has been appointed District and Workhouse Medical Officer by the Basingstoke (Hampshire) Board of Guardians.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERYSTWYTH INFIRMARY AND CARDIGANSHIRE GENERAL HOSPITAL.—House Surgeon. Salary £150 per annum.

BARNSLEY, BECKETT HOSPITAL.—Second House Surgeon, unmarried. Salary £80 per annum and all found.

BATH ROYAL UNITED HOSPITAL.—House Physician and House Surgeon. Salary each £80 per annum, with board, lodging, and washing.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—Assistant Surgeon. Also Resident Medical Officer for six months. Salary at rate of £60 per annum, with board and residence.

BETHNAL GREEN INFIRMARY AND WORKHOUSE, Cambridge Heath, E.—Assistant Medical Officer. Salary at rate of £100 per annum, with board, residence, and washing.

BIRKENHEAD BOROUGH HOSPITAL.—Senior Resident House Surgeon. Salary £100 per annum. Also Junior Resident House Surgeon. Salary £80 per annum.

BIRKENHEAD UNION INFIRMARY AND SANATORIUM.—Senior Resident Assistant Medical Officer. Salary £120 per annum, with board, washing, and apartments.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—Two House Surgeons for six months. Salary at rate of £75 per annum, with board and residence.

BRIGHTON, ROYAL SUSSEX COUNTY HOSPITAL.—Assistant Pathologist. Salary £100 per annum, with board, residence, and laundry.

BRISTOL GENERAL HOSPITAL.—House Physician, Assistant House Physician, and Casualty House Surgeon. Each for six months. Salary £60, with board, residence, &c.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Junior Resident Officer. Salary £90 per annum, with rooms and attendance.

BUXTON, DEVONSHIRE HOSPITAL.—Pathologist. Salary at rate of £250 per annum.

CAMBRIDGE, COUNTY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £140 per annum, with board, lodging, and attendance.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road.—Resident House Surgeon. Salary £50 per annum, with board and residence.

CHARING CROSS HOSPITAL, W.C.—Resident Medical Officer. Salary £100 per annum, with full board.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum, with board, residence, and washing. Also House Physician. Salary £80 per annum, with board, residence, and washing.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with rooms, board, washing, and attendance.

CROYDON GENERAL HOSPITAL.—Junior House Surgeon. Salary £60 per annum, with board, laundry, and residence.

DARLINGTON, BOROUGH OF.—Medical Officer of Health. Salary £500 per annum.

DARLINGTON HOSPITAL AND DISPENSARY.—House Surgeon, unmarried. Salary £120 per annum, with board, lodging, and laundry.

DORCHESTER ASYLUM.—Assistant Medical Officer. Salary £190 per annum, with board, &c.

DREADNOUGHT HOSPITAL, Greenwich.—Two House Physicians and Two House Surgeons for six months. Salary in each case £50 per annum, with board, residence, and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Medical Officer to Casualty Department, also Second Medical Officer, both for six months. Salaries at rate of £100 and £40 per annum respectively, with luncheon and tea.

HAMPSTEAD GENERAL HOSPITAL.—House Surgeon for six months. Salary at rate of £70 per annum, with board and residence.

HARTLEPOOLS HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

HULL ROYAL INFIRMARY.—Casualty House Surgeon for six months. Salary at rate of £60 per annum, with board and lodging.

KING EDWARD VII. MEMORIAL SANATORIUM FOR SHROPSHIRE.—Resident Medical Superintendent, unmarried. Salary £200 per annum, with board and residence.

LAMBETH INFIRMARY, Brook-street, Kennington-road, S.E.—Fourth Assistant Medical Officer. Salary at rate of £100 per annum.

LEEDS PUBLIC DISPENSARY.—Senior Resident Medical Officer, unmarried. Salary £200 per annum, with board and residence.

LIVERPOOL STANLEY HOSPITAL.—Two Junior House Surgeons. Salary £70 and £60 per annum respectively.
LONDON FEVER HOSPITAL, Islington, N.—Assistant Physician.
MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board and residence.
MANCHESTER, HULME DISPENSARY.—Honorary Physician and Honorary Surgeon.
MANCHESTER ROYAL INFIRMARY.—Director of Cancer Research Laboratory. Salary £300 per annum.
NEWCASTLE-UPON-TYNE, HOSPITAL FOR SICK CHILDREN.—Honorary Pathologist.
NORWICH, CITY OF.—Assistant Medical Officer of Health. Salary £150 per annum, with rooms, board, and washing.
NORWICH, NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Salary £20, with board, lodging, and washing.
NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160, with apartments, attendance, &c.
ROCHDALE INFIRMARY.—Junior House Surgeon, unmarried. Salary £80 per annum, with board, residence, and laundry.
ROYAL EAR HOSPITAL, Soho.—House Surgeon. Salary £40 per annum.
ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Female House Physician and Female House Surgeon. Board, lodging, and washing provided. Also Senior Obstetric Assistant. Salary £50 per annum, with board, lodging, and washing. Also Clinical Assistant to Ophthalmic Surgeon.
ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—Surgeon.
ROYAL NAVAL MEDICAL SERVICE.—Twelve Commissions.
ST. HELENS, COUNTY BOROUGH OF.—Assistant Medical Officer of Health. Salary £250 per annum.
SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Two Medical Registrars.
STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence.
SWANSEA, COUNTY BOROUGH OF.—Medical Officer of Health. Salary £500 per annum.
SWANSEA GENERAL AND EYE HOSPITAL.—House Physician. Salary £75 per annum, with board, washing, and attendance.
THROAT HOSPITAL, Golden-square, W.—Resident House Surgeon. Salary £75 per annum, with board, residence, and laundry.
TRANSVAAL MINERS' PHTHISIS SANATORIUM, Springkell, Modderfontein, near Johannesburg.—Medical Superintendent. Salary £1000 per annum, with furnished residence.
WEST BROMWICH DISTRICT HOSPITAL.—Senior House Surgeon, unmarried. Salary £110 per annum, with board, residence, and washing.
WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Honorary Surgeon.
WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—House Surgeon. Salary £100 per annum. Also Junior House Physician. Salary £75 per annum.
YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £130 per annum, with board, lodging, and attendance.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Cuiross, in the county of Fife; at Clackmannan, in the county of Clackmannan; and at Buckfastleigh, in the county of Devon.

Births, Marriages, and Deaths.

BIRTHS.

ARMSTRONG.—On March 20th, at Singleton House, Monmouth, the wife of A. Keith Armstrong, M.R.C.S., L.R.C.P., of a son.
HILDESHEIM.—On March 23rd, at The Corner House, Northwood, the wife of O. Hildesheim, M.D., of a son.
MACTIER.—On March 20th, at Queen's-gardens, St. Andrews, the wife of W. B. MacTier, M.B., of a son.
MARTIN.—On March 19th, at Clifton Vale, Clifton, Bristol, the wife of R. Collins Martin, M.R.C.S. Eng., L.R.C.P. Lond., of a son.

MARRIAGES.

MACNAIR—PHORSON.—On March 28th, at North Bridge-street Presbyterian Church, Sunderland, David Macnair, M.B., Brunswick-terrace, Plymouth, to Winifred, only daughter of P. Phorson, Esq., of Glen Lea, Roker, and Brachead, Rothbury.

DEATHS.

MCMANUS.—On March 26th, at Mayo House, Spencer Park, Wandsworth Common, Leonard Strong McManus, M.D., aged 54 years.
POWELL.—On March 23rd, at Calthorpe-road, Edgbaston, George William Powell, B.A., M.B., B.Ch., aged 49 years.
POWELL.—On March 23rd, at Rangoon, Burma, from pneumonia, Lieutenant-Colonel Simpson Powell, M.D., R.A.M.C.
SEDGWICK.—On March 21st, at Gloucester-terrace, Hyde Park, suddenly, Leonard William Sedgwick, M.D., aged 82 years.
THREADGALE.—On March 19th, at London-road, St. Leonards-on-Sea, Robert Easey Threadgale, M.D., aged 79 years.
TYRRELL.—On March 22nd, at Queen Alexandra Military Hospital, Millbank, S.W., Major Arthur F. Tyrrell, R.A.M.C., aged 45 years.
WEBB.—On March 24th, at Cley, Norfolk, Charles Frere Webb, M.D., F.R.C.S., aged 62 years.
WILLAN.—On March 24th, 1911, at 23, Claremont-place, Newcastle-on-Tyne, from gastro-enteritis, Eleanor Constantine, infant daughter of R. J. and Dorothy E. Willan. No flowers.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

QUESTION OF ASSISTANCE AT POST-MORTEM EXAMINATIONS.

BEFORE giving evidence in a case at Deptford coroner's court on Tuesday Mr. D. F. Burney, divisional surgeon of police, said: Before taking the oath I would like to make a protest against the annoyance and indignity to which the medical men of this district are subjected in making post-mortem examinations at this mortuary. Before making an autopsy in this case I was informed by the mortuary keeper that he had been forbidden by the Deptford Borough Council, his employers, to assist in even the most menial duties in an examination. I have performed post-mortem examinations in all parts of London during the past 15 years, but I have never yet experienced the annoyance and indignity to which I was subjected when making the examination in this case.

The Coroner: You received no assistance from the mortuary keeper?

The Doctor: None whatever. I take it that the doctor is not supposed to do the toilet of the dead. Up to the present case I have always had the assistance of the keeper. The members of the medical profession are not hewers of wood and drawers of water.

The Coroner: I quite sympathise with you in your difficulty. You have to make your examination and determine the cause of death in order to give it in evidence, and I consider that no obstacles should be placed in your way. In all the other districts the mortuary keeper gives his assistance in washing the body, &c., but the Deptford Borough Council has forbidden the present keeper to follow the custom in view of the fact that his predecessor met his death by blood poisoning, which he contracted from a corpse suffering from this malady. Substantial damages had been won by the widow, and the council had decided not to risk another such fatality. I should suggest that the medical men of the district should make a representation to the Deptford Council on this subject.

CAN A MEDICAL MAN REFUSE HIS SERVICES?

To the Editor of THE LANCET.

SIR,—Will you kindly inform me through your valuable journal whether a registered medical practitioner is legally *bound* (although a fee is tendered) to give professional services when called on to do so?

I am, Sir, yours faithfully,

March 17th, 1911. INQUIRER.

*** We have answered our correspondent on p. 891.—ED. L.

A PLAGUE MASK.

Messrs. A. W. Gamage, Limited, have forwarded to the plague-stricken districts of Manchuria some plague masks made of oil silk and completely covering the face. A pad of absorbent wool placed between very fine gauze is inserted in the mask below the nostrils, and glazed metal cups protect the eyes. The absorbent wool is impregnated with a germicide, and the whole mask can be dipped into a germicide or an antiseptic before and after use.

"SCAMPED" VACCINATION.

To the Editor of THE LANCET.

SIR,—I wish to raise the question of inefficient vaccination. I am often asked by parents to vaccinate their children "in one place only," and I invariably refuse to be a party to what I consider a farce or a fraud. The consequence is they go to a neighbouring practitioner, who, I am informed, obliges them with one vesicle for one shilling. It would be interesting to know if this practice is widely spread, as it evidently operates greatly to the discredit of vaccination in the eyes of the public. At the age of three or four these children will be quite unprotected, but if they unfortunately contracted the disease they would be reckoned with the vaccinated. Better far do away with mock compulsion and let the objectors take the risks they are willing to face, while the profession protects all those who believe in efficient vaccination and revaccination.

I am, Sir, yours faithfully,

Hoxton, March 24th, 1911. HENRY GEO. DIXON.

FILTERED TOBACCO SMOKE.

ONE of the neatest devices which we have seen for automatically filtering tobacco smoke before it reaches the mouth is in some cigarettes recently forwarded to us by Mr. Louis Coen, of 316, Vauxhall Bridge-road, Victoria, London, S.W. In the mouthpiece, which is a short piece of cylindrical card, is stretched a linen sieve the interstices of which are fine enough not only to arrest sandy and dusty particles, but oils also. There can be little doubt that in this way certain contributory causes of irritation to the respiratory membranes are removed. The cigarettes are supplied containing either Dubec or Virginia tobacco.

B.—(1) Only secondhand booksellers of experience could give a price on the book mentioned for certain. Our own experience is that very few old medical books of the seventeenth and eighteenth centuries fetch more than a few shillings; if they are in any way imperfect they are worth nothing at all. (2) No one except a qualified medical man can commit the offence technically known as "covering," and we are unable to find anything in the by-laws submitted to us to indicate that it is the medical men who are sanctioning or authorising the employment of quacks. The question of certificates hardly seems to us to bear our correspondent's interpretation. The provision of medicines and the furnishing with certificates are so linked with attendance that if the member does not come under the surgeon's care, or forsakes it for that of unqualified persons, it can no longer be possible for the surgeon to certify truthfully as to what he must perforce be ignorant of. That no provision is made for certificates from unqualified persons recognised by the society is the society's look out, certainly not the surgeon's.

Mr. W. Mayner.—It will have to be proved that the two boroughs in question suffer more than the rest of the country before we can very well publish such an indictment upon them. Evidence of excessive dust or of excessive danger to the inhabitants should be supplied in detailed form and well supported.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for April, 1911:—

April 18th–28th (Tunis).—Exhibition of Hygiene.
April–October.—Rome Exhibition (United Italy's Jubilee).
April 4th–7th (London).—Fourth Annual Nursing and Midwifery Conference and Exhibition.
" 18th–20th (Paris).—Third Congress of Physiotherapy of French-speaking Physicians.
" 18th (Berlin).—Tenth Congress of the German Orthopædic Surgery Society.
" 19th–22nd (Berlin).—German Surgical Congress. (Fortieth Annual Meeting.)
" 19th–22nd (Wiesbaden).—Twenty-eighth German Congress of Internal Medicine.
" 20th–22nd (Groningen).—Thirteenth Nature and Medical Congress.
" 29th–Oct. 26th (Turin).—International Exhibition.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 29th, 1911.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Mar. 23	30·02	N.E.	0·02	59	51	42	46	46	Raining
" 24	30·02	E.	0·09	79	49	39	40	42	Cloudy
" 25	30·01	N.E.	...	91	41	34	33	34	Snowing
" 26	30·04	N.E.	...	78	44	34	35	37	Overcast
" 27	29·83	N.E.	0·04	54	41	34	38	39	Raining
" 28	29·85	E.	0·09	93	55	37	39	40	Fine
" 29	29·85	E.	...	70	51	40	43	43	Overcast

The following journals, magazines, &c., have been received:—Tidsskrift for den Norske Laegeforening, Dominion Medical Monthly, Revue Mensuelle de Gynécologie, d'Obstétrique et de Pédiatrie, Bulletin de l'Association Française par l'Étude du Cancer, Canadian Practitioner, Canadian Medical Association Journal, Archiv für Experimentelle Pathologie und Pharmakologie, Archives of Internal Medicine, Union Magazine, l'Intermédiaire, Le Souvenir, La France Médico-Thermale, Revue d'Hygiène et de Police Sanitaire, Revue de Psychiatrie et de Psychologie Expérimentale, Rangoon Gazette, St. Mary's Hospital Gazette, Hygiene (Offizielle Monatsschrift der Internationalen Hygiene-Ausstellung, Dresden, 1911), Vita e Malattie, Rivista Neuropatologica, Mercy and Truth, Bulletin de l'Académie de Médecine, Revue Clinique d'Andrologie et de Gynécologie, L'Hygiène, Yale Medical Journal, Queensland Education Journal, Annals of Tropical Medicine and Parasitology, Australasian Medical Gazette, Cleveland Medical Journal, University of Pennsylvania Medical Bulletin, The Journal of Nervous and Mental Disease.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W (temporary address during building of new house).

TUESDAY.

PATHOLOGICAL SECTION (Hon. Secretaries—C. Bolton, J. C. G Ledingham), at University College Hospital Medical School Gower-street, W.C.: at 8.30 P.M.

Laboratory Meeting:
Dr. F. H. Thiele: Infantile Goitre in a Litter of Puppies.
Dr. T. R. Elliott: (1) Case of Multiple Gummatous Neuritis; (2) The Development of the Suprarenal Glands in Children.
Mr. H. Morriston Davies: The Pathological Changes in the First Rib Cartilages and their Relation to Apical Phthisis.
Dr. C. Bolton: Acute Extending Ulcer of the Stomach.
Dr. A. G. Levy: Fibrillation of the Ventricles.
Mr. G. E. O. Williams: Cerebral Fat Embolism.
Dr. Otto May: Specimens Illustrating the Regeneration of Axones of Divided Nerves.
Dr. F. J. Poynton and Dr. A. Paine: Specimens Illustrating the Experimental Production of Non-suppurative Osteo-arthritis.
Mr. A. C. Stevenson: Protozoon Parasites of the Mouse.

WEDNESDAY.

SECTION OF BALNEOLOGY AND CLIMATOLOGY (Hon. Secretaries—F. A. de T. Mouillot, A. Manuel): at 5.30 P.M.

Paper:
Dr. David Brown (Harrogate): Some Pharmacological Effects of the Strong Sulphur Water (Harrogate).

THURSDAY.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION (Hon. Secretaries—G. F. Blacker, J. H. Targett), at 11, Chandos-street, W.: at 8 P.M.

Specimens:
Dr. Arthur E. Giles: Hydatid of Uterus.
Dr. R. H. Paramore: Diffuse Fibroma of the Ovary which has Undergone Central Degeneration with Extravasation of Blood.
Dr. G. Blacker: Dermoid Cyst Obstructing Delivery, removed during Labour.

Short Communications:
Mr. J. Malcolm: Case of Ovarian Tumour Obstructing Delivery and Fixed by Suction in the Pelvis.
Mr. H. J. Paterson: Case of Suppurating Ovarian Cyst in a Girl aged Ten Years.

Papers:
Mr. E. Hey Groves: A New Operation for the Radical Treatment of Flat Pelvis.
Dr. Victor Bonney: Five Cases of Utriculoplasty for Uterine Hæmorrhage, One of which was Followed by Pregnancy and Labour.

FRIDAY.

LARYNGOLOGICAL SECTION (Hon. Secretaries—L. Hemington Pegler, W. H. Kelson), at 11, Chandos-street, W.: at 5 P.M.
Mr. Herbert Tilley: (1) Pedunculated Growth on an Elongated Uvula; (2) An Improved form of Hay's Pharyngoscope.
Dr. L. H. Pegler: Case of Functional Aphonia in a Boy.
Mr. Walter Howarth: Case of Chronic Laryngitis.
And other cases and specimens.

RÖNTGEN SOCIETY, King's College, Strand.

THURSDAY.—8.15 P.M., Prof. C. G. Barkla: Secondary Rays.—Prof. Wilson: An Improvement in High Tension Discharge Apparatus.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Dr. A. H. Pirie: The Diagnosis of Obscure Conditions in the Chest, with Special Reference to New Growth, Aneurysm, and Enlarged Glands.

CHILD STUDY SOCIETY, LONDON, 90, Buckingham-Palace-road, S.W.

THURSDAY.—7.30 P.M., Dr. A. R. Abelson: The Measurement of the Intelligence, with Special Reference to Mentally Defective Children.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Mr. W. Fox: Clinique (Skin). 5.15 P.M., Lecture:—Dr. N. Tirard: Trophic Lesions in Diabetes.
TUESDAY.—4 P.M., Dr. H. Mackenzie: Clinique (Medical). 5.15 P.M., Lecture:—Dr. F. J. Poynton: Abdominal Emergencies from the Standpoint of the Physician.
WEDNESDAY.—4 P.M., Mr. J. M. G. Swainson: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. R. Maguire: Emphysema and its Consequences.
THURSDAY.—4 P.M., Dr. L. Williams: Clinique (Medical). 5.15 P.M., Lecture:—Dr. U. Pritchard: The Treatment of Middle Ear Suppuration.
FRIDAY.—4 P.M., Mr. K. Campbell: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women.

THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).

TUESDAY.—Clinic:—10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. Howell Evans); Gynæcological (Dr. A. H. Giles). 3.30 P.M., Medical In-patient: (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen): Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie). 3 P.M., Dr. F. Thomson: Demonstration of Cases of Infectious Fevers at the North-Eastern Fever Hospital, St. Anne's-road, N.

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. H. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie). 3 P.M., Dr. F. Thomson: Demonstration of Cases of Infectious Fevers at the North-Eastern Fever Hospital, St. Anne's-road, N.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY.—3.45 P.M., Mr. J. G. French: Tracheoscopy, &c.
FRIDAY.—3.30 P.M., Mr. C. Nourse: Adenoids.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.

FRIDAY.—9 P.M., Prof. Sir J. J. Thomson: A New Method of Chemical Analysis.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., The Physicians and Surgeons of the Hospital will give a Demonstration of Cases. (Post-Graduate Clinic.)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (5th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (6th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (8th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.) Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
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Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

(The rate for the United Kingdom will apply also to Medical Subordinates in India whose rate of pay, including allowances, is less than Rs.50 per month.)

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